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Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Eriogonum codium* (Umtanum Desert Buckwheat) and *Physaria douglasii* subsp. *tuplashensis* (White Bluffs Bladderpod); Final Rule

## DEPARTMENT OF THE INTERIOR

## Fish and Wildlife Service

## 50 CFR Part 17

[Docket No. FWS-R1-ES-2013-0012;  
4500030113]

RIN 1018-AZ54

**Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Eriogonum codium* (Umtanum Desert Buckwheat) and *Physaria douglasii* subsp. *tuplashensis* (White Bluffs Bladderpod)**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service, designate critical habitat for Umtanum desert buckwheat (*Eriogonum codium*) and White Bluffs bladderpod (*Physaria douglasii* subsp. *tuplashensis*) under the Act. In total, approximately 344 acres (139 hectares) are designated as critical habitat for *Eriogonum codium* in Benton County, Washington, and approximately 2,861 acres (1,158 hectares) are designated as critical habitat for *Physaria douglasii* subsp. *tuplashensis* in Franklin County, Washington. The effect of this regulation is to conserve both species' habitat under the Endangered Species Act.

**DATES:** This rule becomes effective on May 23, 2013.

**ADDRESSES:** This final rule is available on the Internet at <http://www.regulations.gov> and at <http://www.fws.gov/wafwo/HanfordPlants>. Comments and materials received, as well as supporting documentation used in preparing this final rule are available for public inspection, by appointment, during normal business hours, at U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, 510 Desmond Drive SE., Suite 102, Lacey, WA 98503-1263; (360) 753-9440 (telephone); (360) 753-9008 (facsimile).

The coordinates or plot points or both from which the maps are generated are included in the administrative record for this critical habitat designation and are available at ([http://www.fws.gov/wafwo/Hanford\\_Plants/FLFCH.html](http://www.fws.gov/wafwo/Hanford_Plants/FLFCH.html)), [www.regulations.gov](http://www.regulations.gov) at Docket No. FWS-R1-ES-2013-0012, and at the (Washington Fish and Wildlife Office) (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we may develop for this critical habitat designation will also be available at the Fish and Wildlife

Service Web site and Field Office set out above, and may also be included in the preamble and/or at [www.regulations.gov](http://www.regulations.gov).

**FOR FURTHER INFORMATION CONTACT:** Ken Berg, Manager, U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, 510 Desmond Drive, Suite 102, Lacey, Washington 98503-1263, by telephone (360) 753-9440, or by facsimile (360) 753-9405. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800-877-8339.

**SUPPLEMENTARY INFORMATION:**

**Executive Summary**

*Why we need to publish a rule.* This is a final rule to designate critical habitat for Umtanum desert buckwheat and White Bluffs bladderpod. Under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), any species that is determined to be an endangered or threatened species requires that critical habitat be designated, to the maximum extent prudent and determinable. Designations and revisions of critical habitat can only be completed by issuing a rule.

Elsewhere in today's **Federal Register**, we, the U.S. Fish and Wildlife Service, list Umtanum desert buckwheat and White Bluffs bladderpod as threatened species. On May 15, 2012, we published in the **Federal Register** a proposed listing and critical habitat designation for both species. Section 4(b)(2) of the Act states that the Secretary shall designate critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat.

The critical habitat areas we are designating in this rule constitute our current best assessment of the areas that meet the definition of critical habitat for Umtanum desert buckwheat and White Bluffs bladderpod. Here we are designating approximately 2,744 acres of Federal land, 42 acres of State land, and 419 acres of private land as critical habitat for both species.

We have prepared an *economic analysis of the designation of critical habitat*. In order to consider economic impacts, we have prepared an analysis of the economic impacts of the critical habitat designations and related factors. We announced the availability of the draft economic analysis (DEA) in the May 15, 2012, proposed rule (77 FR 28704), allowing the public to provide comments on our analysis. No

comments were received in response to the DEA.

*Peer review and public comment.* We sought comments from independent specialists to ensure that our designation is based on scientifically sound data, assumptions, and analyses. We obtained opinions from four knowledgeable individuals with scientific expertise to review our technical assumptions, analysis, and whether or not we had used the best available information. These peer reviewers generally concurred with our methods and conclusions and provided additional information, clarifications, and suggestions to improve this final rule. Information we received from peer review is incorporated in this final designation. We did not receive any comments from the public regarding the proposed critical habitat designation or the draft economic analysis.

**Previous Federal Actions**

*Candidate History:* Umtanum desert buckwheat (*Eriogonum codium*) and White Bluffs bladderpod (formerly *Lesquerella tuplashensis*, now *Physaria douglasii* subsp. *tuplashensis*) (see "Taxonomy" section below), were identified as candidates for possible addition to the Lists of Endangered and Threatened Wildlife and Plants in our Annual Candidate Notice of Review, published in the **Federal Register** on October 25, 1999 (64 FR 57542). We refer to both species by their common names throughout this rule. Both species were given a Listing Priority Number (LPN) of 5 at that time; the LPN is assigned to a species based on the immediacy and magnitude of threats and the species' taxonomic status. In 1999, threats to both species were considered to be of high magnitude, but not imminent. However, in 2002, the LPN for Umtanum desert buckwheat was revised to LPN 2, which is assigned when threats to a species are of high magnitude and imminence (67 FR 40663; June 13, 2002), based on new information revealing low reproduction for the species. The LPN for White Bluffs bladderpod was revised to LPN 9 in 2009 (74 FR 57810; November 9, 2009), to reflect new information indicating threats were now moderate to low in magnitude and imminence. In 2009, the Service completed a Spotlight Species Action Plan for White Bluffs bladderpod to set conservation targets and identify actions to achieve those targets for the next 5 years. This plan can be found on the Service's Web site at: [http://www.fws.gov/ecos/ajax/docs/action\\_plans/doc3090.pdf](http://www.fws.gov/ecos/ajax/docs/action_plans/doc3090.pdf). The 2011 Notice of Review, published October 26, 2011 (76 FR 66370), included Umtanum

desert buckwheat and White Bluffs bladderpod; both species have been maintained as candidates since 1999.

**Petition History:** A petition requesting that Umtanum desert buckwheat, White Bluffs bladderpod, and several other species be listed as endangered under the Act was received on May 4, 2004 (Center for Biological Diversity *et al.* [CBD] 2004, pp. 49, 100). On July 12, 2011, the Service filed a multiyear work plan as part of a settlement agreement with the Center for Biological Diversity (CBD) and others in a consolidated case in the U.S. District Court for the District of Columbia. The settlement agreement was approved by the court on September 9, 2011, and will enable the Service to systematically review and address the conservation needs of more than 250 species, over a period of 6 years, including Umtanum desert buckwheat and White Bluffs bladderpod.

We proposed listing Umtanum desert buckwheat and White Bluffs bladderpod as threatened under the Act (16 U.S.C. 1531 *et seq.*) with critical habitat (77 FR 28704) on May 15, 2012, and announced the availability of a draft economic analysis. Proposed critical habitat included shrub steppe habitats within Benton County, Washington, for Umtanum desert buckwheat, and White Bluffs bladderpod within Franklin County, Washington. The final listing rule published elsewhere in today's **Federal Register**.

### Background

It is our intent to discuss only those topics directly relevant to the listing and critical habitat designations for Umtanum desert buckwheat and White Bluffs bladderpod in this final rule. A summary of topics relevant to this final rule is provided below. Additional information on both species may be found in the Candidate Notice of Review, which was published October 26, 2011 (76 FR 66370).

#### *Geography, Climate, and Landscape Setting*

Umtanum desert buckwheat and White Bluffs bladderpod are found only on the Hanford Reach of the Columbia River, the last free-flowing stretch of the Columbia River within U.S. borders. The Hanford Reach lies within the semi-arid shrub steppe Pasco Basin of the Columbia Plateau in south-central Washington State. The region's climate is influenced by the Pacific Ocean, the Cascade Mountain Range to the west, and other mountain ranges located to the north and east. The Pacific Ocean moderates temperatures throughout the Pacific Northwest, and the Cascade

Range generates a rain shadow that limits rain and snowfall in the eastern half of Washington State. The Cascade Range also serves as a source of cold air, which has a considerable effect on the wind regime on the Hanford reach. Daily maximum temperatures vary from an average of 1.7 °Celsius (C) (35 °F (F)) in late December and early January, to 36 °C (96 °F) in late July. The Hanford Reach is generally quite arid, with an average annual precipitation of 16 centimeters (cm) (6.3 inches (in)). The relative humidity at the Hanford Reach is highest during the winter months, averaging about 76 percent, and lowest during the summer, averaging about 36 percent. Average snowfall ranges from 0.25 cm (0.1 in) in October to a maximum of 13.2 cm (5.2 in) in December, decreasing to 1.3 cm (0.5 in) in March. Snowfall accounts for about 38 percent of all precipitation from December through February (USFWS 2008, pp. 3.8–3.10).

The Hanford Reach National Monument (Monument), which includes approximately 78,780 hectares (ha) (195,000 acres (ac)), contains much of the Hanford Reach of the Columbia River. All of the land is owned by the DOE and was formerly part of the 145,440-ha (360,000-ac) Hanford installation. The Hanford installation was established by the U.S. Government in 1943 as a national security area for the production of weapons grade plutonium and purification facilities. For more than 40 years, the primary mission at Hanford was associated with the production of nuclear materials for national defense. However, large tracts of land were used as protective buffer zones for safety and security purposes and remained relatively undisturbed.

The Monument was established by Presidential Proclamation in June 2000, to connect these tracts of land, protecting the river reach and the largest remnant of the shrub steppe ecosystem in the Columbia River Basin. The Hanford Reach National Monument Proclamation identifies several nationally significant resources, including a diversity of rare native plant and animal species, such as Umtanum desert buckwheat and White Bluffs bladderpod (USFWS 2008, p. 1–4). The Proclamation also sets forth specific management actions and mechanisms that are to be followed: (1) Federal lands are withdrawn from disposition under public land laws, including all interests in these lands, such as future mining claims; (2) off-road vehicle use is prohibited; (3) the ability to apply for water rights is established; (4) grazing is prohibited; (5) the Service and DOE (subject to certain provisions) are

established as managers of the Monument; (6) a land management transfer mechanism from the DOE to the Service is established; (7) cleanup and restoration activities are assured; and (8) existing rights, including tribal rights, are protected.

All lands included in the Hanford Reach National Monument are Federal lands under the primary jurisdiction of the DOE. Approximately 66,660 ha (165,000 ac) of these acres are currently managed as an overlay refuge by the Service through agreements with the DOE. Overlay refuges exist where the Service manages lands for the benefit of fish and wildlife resources, but is not the primary holder in fee title of lands forming the refuge (USFWS 2008, p. 1–7). Because the Monument is administered as a component of the National Wildlife Refuge System, the legal mandates and policies that apply to any national wildlife refuge apply to the Monument. The Proclamation directs the DOE and the Service to protect and conserve the area's native plant communities, specifically recognizing the area's biologically diverse shrub steppe ecosystem (USFWS 2008, pp. 1.21, 3.5). The DOE manages approximately 11,716 ha (29,000 ac) of land within the Monument and retains land surface ownership or control on all Monument acreage. Thus, the Service and DOE have joint management responsibility for the Monument.

The parcel of land where Umtanum desert buckwheat occurs is on part of what was historically called the McGee Ranch, a historical homestead of more than 364 ha (900 ac) within the greater Hanford installation. Management of this parcel has been retained by DOE due to unresolved issues related to contaminants. This situation is expected to be resolved over time, and management conveyed to the Monument, since this area is not essential to the operation of the Hanford facility. Umtanum desert buckwheat and White Bluffs bladderpod both occur in narrow, linear bands on bluffs above and on opposite sides of the Columbia River. The populations are approximately 15 kilometers (km) (9 miles (mi)) apart, and although relatively near to each other, their habitat has a widely disparate geologic history and subsequent soil development. These conditions create unique habitats and substrates that support these and other rare endemic plants (see *Species Information* sections) within the Hanford Reach.

Species Information

Umtanum Desert Buckwheat

Umtanum desert buckwheat is a long-lived, woody perennial plant that forms low mats. Individual plants may exceed 100 years of age, based on counts of annual growth rings on cross sections of the main stems of recently dead plants. Growth rates are also extremely slow, with stem diameters increasing an average of only 0.17 millimeters (mm) (0.007 in) per year (The Nature Conservancy (TNC) 1998, p. 9; Dunwiddie *et al.* 2001, p. 62). A detailed description of the identifying characteristics of Umtanum desert buckwheat is found in Reveal *et al.* (1995, pp. 350–351). Umtanum desert buckwheat is State-listed as Endangered, with a G1 (i.e., critically imperiled worldwide, and particularly vulnerable to extinction) global ranking and an S1 (i.e., critically imperiled Statewide, and particularly vulnerable to extinction) State ranking (WDNR 2011a, p. 5).

Taxonomy

In 1995, Florence Caplow and Kathryn Beck resumed large-scale rare plant surveys on the Hanford Site that were initiated in 1994 by TNC and the DOE, as part of the Hanford Biodiversity Project. Two previously undescribed plant taxa were discovered, including Umtanum desert buckwheat (Caplow and Beck 1996, p. 5). The species was fully described in Reveal *et al.* (1995), and the current nomenclature has been unchallenged since that time. Umtanum desert buckwheat is recognized as a distinct species, and there is no known controversy concerning its taxonomy.

Habitat/Life History

Umtanum desert buckwheat was discovered in 1995 during a botanical survey of the Hanford installation (Reveal *et al.* 1995, p. 353), and is found exclusively on soils over exposed basalt from the Lolo Flow of the Wanapum Basalt Formation. As the basalt of the Lolo Flow weathers, a rocky soil type is formed that is classified as lithosol, a term describing the well-drained, shallow, generally stony soils over bedrock (Franklin and Dyrness 1973, p. 347), and talus slopes associated with eroding outcrops and cliffs. These cliffs (scarps) and loose rock at the base of cliffs or on slopes (defined as scree) are found along the crests and slopes of local hills and ridges, including east Umtanum Ridge, where Umtanum desert buckwheat occurs. This type of landform in the Columbia Basin is determined by the underlying basalts, which may be exposed above the soil on

ridge tops or where wind and water erode the fine soils away (Sackschewski and Downs 2001, p. 2.1.1).

The Lolo Flow contains higher levels of titanium dioxide and lower levels of iron oxide than the neighboring Rosalia Flow, also of the Priest Rapids Member. The flow top material commonly has a high porosity and permeability and has weathered to pebble and gravel-sized pieces of vesicular basalt (Reveal *et al.* 1995, p. 354). This basalt typically contains small (<5 mm (0.2 in)) crystals of the mineral olivine and rare clusters of plagioclase crystals (Reidel and Fecht 1981, pp. 3–13). It is unknown if the close association of Umtanum desert buckwheat with the lithosols of the Lolo Flow is related to the chemical composition or physical characteristics of the bedrock on which it is found, or a combination of factors not currently understood (Reveal *et al.* 1995, p. 354).

Preliminary counts indicate that seed set occurs in approximately 10 percent of flowers observed, potentially limiting reproductive capacity. Based on a pollinator exclusion study (Beck 1999, pp. 25–27), the species is probably capable of at least limited amounts of self-pollination, although the percentage of seed set in the absence of pollinators appears to be low. A variety of insect pollinators were observed on Umtanum desert buckwheat flowers, including ants, beetles, flies, spiders, moths and butterflies (TNC 1998, p. 8). Wasps from the families *Vespidae* and *Typhiidae* and a wasp from the species *Criosciolia* have been observed in the vicinity of Umtanum desert buckwheat, but not on the plant itself. A bumble bee, *Bombus centralis*, has been observed by Washington Department of Natural Resources (WDNR) specialists utilizing flowers of Umtanum desert buckwheat plants (Arnett 2011b, pers. comm.).

Common perennial plant associates of Umtanum desert buckwheat include *Artemisia tridentata* (big sagebrush), *Grayia spinosa* (spiny hopsage), *Krascheninnikovia lanata* (winterfat), *Eriogonum sphaerocephalum* (rock buckwheat), *Salvia dorrii* (purple sage), *Hesperostipa comata* (needle and thread), *Pseudoroegneria spicata* (bluebunch wheatgrass), *Poa secunda* (Sandberg’s bluegrass), *Sphaeralcea munroana* (Munro’s globemallow), *Astragalus caricinus* (buckwheat milkvetch), and *Balsamorhiza careyana* (Carey’s balsamroot). Common annual associates include *Bromus tectorum* (cheatgrass), *Sisymbrium altissimum* (tumblemustard), *Phacelia linearis* (threadleaf phacelia), *Aliciella leptomeria* (sand gilia), *Aliciella sinuata* (shy gilia), *Camissonia minor* (small

evening primrose), and *Cryptantha pterocarya* (wingnut cryptantha).

Historical Range/Distribution

The only known population of Umtanum desert buckwheat occurs along the top edges of the steep slopes on Umtanum Ridge, a wide mountain ridge in Benton County, Washington, where it has a discontinuous distribution along a narrow (25–150 m (82–492 ft) wide by 1.6 km (1 mi) long) portion of the ridge (Dunwiddie *et al.* 2001, p. 59). The species was discovered in 1995 (Reveal *et al.* 1995, p. 354), and there are no verified records of any collections prior to that year.

Current Range/Distribution

It is unknown if the historic distribution of Umtanum desert buckwheat was different than the species’ current distribution, but it is likely the species has been confined to this location during at least the last 150 years, as annual growth ring counts from fire-killed plants revealed individual ages in excess of 100 years. Individual plants with greater stem diameters (and, therefore, presumably older) are present, which supports the 150-year minimum locality occupation estimate.

Population Estimates/Status

The only known population of Umtanum desert buckwheat was fully censused (an accounting of the number of all individuals in a population) in 1995, 1997, 2005, and 2011 (see Table 1). In 1995, researchers counted 4,917 living individual plants, and in 1997, researchers counted 5,228 individuals (Dunwiddie *et al.* 2001, p. 61). The 1995 census was “roughly counted” (Beck 1999, p. 3) (i.e., there was a greater degree of estimation), while the 1997 count was more precise. In addition, the 1995 count may have overlooked an isolated patch with 79 plants to the east that was discovered in 2011. It is not uncommon for estimated population counts to be substantially lower than precise counts (Arnett 2011a, pers. comm.).

TABLE 1—UMTANUM DESERT BUCKWHEAT POPULATION COUNTS 1995–2011

Census year	Total plants counted
1995 .....	4,917
1997 .....	5,228
2005 .....	4,408
2011 .....	5,169

After a wildfire in 1997 burned through a portion of the population, a

subsequent count found 5,228 living and 813 dead individual plants. A minimum of 75 percent of the 813 dead individual plants died as a direct result of the fire (Dunwiddie *et al.* 2001, p. 61). No survival or resprouting was noted in fire-killed plants in following years. Because a more accurate count was used to derive the number of dead individual plants (Beck 1999, p. 3), this total represents a fairly precise measure of the impact of the 1997 wildfire on Umtanum desert buckwheat (Arnett 2011a, pers. comm.), although it is likely some plants were totally consumed by the fire and, therefore, unidentifiable.

In 2005, researchers reported 4,408 living plants (Caplow 2005, p. 1), which represents a 15 percent decline in the population over an 8-year period. However, this result likely reflects some variability in how the census was performed over the years since the species was discovered in 1995. On July 12, 2011, a complete population census was conducted, which recorded 5,169 living individuals. This count was somewhat higher than average, which could be attributable to a more thorough census, the identification of plant clusters not previously documented, and the recording of larger clumps as containing more than one individual plant. These clumps were likely counted as individual plants in previous counts (Arnett 2011a, pers. comm.).

Demographic monitoring of the largest subpopulation within the main population commenced in 1997, and demonstrated an average 2 percent annual mortality of adult flowering plants. During the 9 years of monitoring, only 4 or 5 seedlings have been observed to survive beyond the year of their germination (Kaye 2007, p. 5). Since 2007, the demographic monitoring plots continue to reflect population declines and minimal recruitment (Arnett 2011b, pers. comm.). Dunwiddie *et al.* (2001, p. 67) documented a lack of plants in the smallest size classes and the absence of any seed survival over 1 year. Their data did not indicate any spikes or gaps in the size distribution of plants that might reflect years of unusually high or low recruitment of plants, although evidence of such could have been obscured by the variable growth rates of the plants. Populations of long-lived species with low adult mortality can survive with relatively low recruitment rates (Harper 1977 in Dunwiddie *et al.* 2001, p. 67). Further, the survival of a few seedlings each year may be sufficient to replace the occasional adult that dies, or alternatively, an occasional bumper crop of seedlings surviving to maturity

during several favorable years may ensure the long-term survival of the population (Dunwiddie *et al.* 2001, p. 67). However, no demographic data supported either of these scenarios for this species (Dunwiddie *et al.* 2001, p. 67).

An unpublished draft population viability analysis (PVA) was completed in 2007 by Thomas Kaye (2007, p. 5), based on 9 years of demographic data. A PVA is a quantitative analysis of population dynamics, with the goal of assessing the risk of extinction of a species. The 2007 study, which took into account observed environmental variability, determined there was little or no risk of a 90 percent population decline within the next 100 years; an approximate 13 percent chance of a decline of 50 percent of the population over the next 50 years; and a 72 percent chance of a 50 percent decline within the next 100 years. The PVA concluded the decline is gradual, consistent with the decline noted by Caplow (2005, p. 1) between 1997 and 2005, and will likely take several decades to impact the population (Kaye 2007, p. 7). Although census data indicates more individuals in 2011 compared to the number of individuals in 1995 and 2005, this increase likely reflects some variability in how the census was performed. The inflorescence for Umtanum desert buckwheat consists of a cluster of flowers arranged on a main stem or branch. As stated earlier, the fact that the 2011 census was somewhat higher than previous plant counts may be attributable to the identification of plant clusters not previously documented, or individually counting plants present in plant clusters (rather than counting the cluster itself as one plant) (Arnett 2011a, pers. comm.). Since 1995, numerous surveys have been conducted at other locations within the lower Columbia River Basin, within every habitat type that appears to be suitable for Umtanum desert buckwheat. However no other populations or individuals have been found to date.

#### Species Information

##### White Bluffs Bladderpod

White Bluffs bladderpod is a low-growing, herbaceous, perennial plant with a sturdy tap root and a dense rosette of broad gray-green pubescent (having any kind of hairs) leaves (WDNR 2010). The subspecies produces showy yellow flowers on relatively short stems in May, June, and July. The subspecies inhabits dry, steep upper zone and top exposures of the White Bluffs area of the Hanford Reach at the lower edge of the Wahluke Slope. Along

these bluffs, a layer of highly alkaline, fossilized cemented calcium carbonate (caliche) soil has been exposed (Rollins *et al.* 1996, pp. 203–205). A detailed description of the identifying physical characteristics of White Bluffs bladderpod is in Rollins *et al.* (1996, pp. 203–205) and Al-Shehbaz and O’Kane (2002, pp. 319–320). White Bluffs bladderpod is State-listed as Threatened, with a G2 (i.e., imperiled world-wide, vulnerable to extinction) global ranking and an S2 (i.e., vulnerable to extirpation) State ranking (WDNR 2011).

#### Taxonomy

Although specimens of this taxon were originally collected from a population in 1883, the plant material was in poor condition, no definitive identification could be made, and the plant was not recognized as a species at that time. The population was rediscovered in 1994, and was described and published as a species, *Lesquerella tuplashensis*, by Rollins *et al.* (1996, pp. 319–322). A petition requesting that *L. tuplashensis* be listed as endangered under the Act stated that its status as a valid species is uncontroversial (Center for Biological Diversity *et al.* [CBD] 2004, pp. 49,100). Since then, the nomenclature and taxonomy of the species has been investigated.

In a general paper on the taxonomy of *Physaria* and *Lesquerella*, O’Kane and Al-Shehbaz (2002, p. 321) combined the genera *Lesquerella* and *Physaria* and reduced the species *Lesquerella tuplashensis* to *Physaria douglasii* subsp. *tuplashensis* (O’Kane and Al-Shehbaz (2002, p. 322)), providing strong molecular, morphological, distributional, and ecological data to support the union of the two genera.

Rollins and Shaw (1973, entire), took a wide view of the degree of differentiation between species and subspecies (or varieties) of *Lesquerella*, although many species of *Lesquerella* are differentiated by only one or two stable characters. The research of Rollins *et al.* (1996, pp. 205–206) recognized that, although *L. tuplashensis* and *L. douglasii* were quite similar, they differed sufficiently in morphology and phenological traits to warrant recognition as two distinct species. Simmons (2000, p. 75) suggested in a Ph.D. thesis that *L. tuplashensis* may be an ecotype of the more common *L. douglasii*. Caplow *et al.* (2006, pp. 8–10) later argued that *L. tuplashensis* was sufficiently different from *douglasii* to warrant a species rank because it: (1) Was morphologically distinct, differed in stipe (a supporting stalk or stemlike structure) length and

length-to-width ratio of stem leaves, and had statistically significant differences in all other measured characters; (2) was reproductively isolated from *L. douglasii* by nonoverlapping habitat and differences in phenology for virtually all *L. tuplashensis* plants; and (3) had clear differences in the ecological niche between the two taxa.

Based on molecular, morphological, phenological, reproductive, and ecological data, the conclusions in Al-Shehbaz and O'Kane (2002, p. 322) and Caplow *et al.* (2006, pp. 8–10) combining the genera *Lesquerella* and *Physaria* and reducing the species *Lesquerella tuplashensis* to *Physaria douglasii* subsp. *tuplashensis*, provide the most consistent and compelling information available to date. Therefore, we consider the White Bluffs bladderpod a subspecies of the species *Physaria douglasii*, with the scientific name *Physaria douglasii* subspecies *tuplashensis*.

#### Habitat/Life History

The only known population of White Bluffs bladderpod is found primarily on near-vertical exposures of weathered, cemented, alkaline, calcium carbonate paleosol (ancient, buried soil whose composition may reflect a climate significantly different from the climate now prevalent in the area) (<http://www.alcwin.org/> *Dictionary\_of\_Geology\_Description-84-P.htm*). The hardened carbonate paleosol caps several hundred feet of alkaline, easily eroded, lacustrine sediments of the Ringold Formation, a sedimentary formation made up of soft Pleistocene deposits of clay, gravel, sand, and silt (Newcomb 1958, p. 328). The uppermost part of the Ringold Formation is a heavily calcified and silicified cap layer to a depth of at least 4.6 m (15 ft). This layer is commonly called "caliche" although in this case, it lacks the nitrate constituents found in true caliche. The "caliche" layer is a resistant caprock underlying the approximately 274–304 m (900–1,000 ft) elevation (above sea level) plateau extending north and east from the White Bluffs (Newcomb 1958, p. 330). The White Bluffs bladderpod may be an obligate calciphile, as are many of the endemic *Lesquerella* (now *Physaria*) (Caplow 2006, pp. 2–12). The habitat of White Bluffs bladderpod is arid, and vegetative cover is sparse (Rollins *et al.* 1996, p. 206).

Common associated plant species include: *Artemisia tridentata* (big sagebrush), *Poa secunda* (Sandberg's bluegrass), *Bromus tectorum* (cheatgrass), *Astragalus caricinus* (buckwheat milk-vetch), *Eriogonum*

*microthecum* (slender buckwheat), *Achnatherum hymenoides* (Indian ricegrass), and *Cryptantha spiculifera* (Snake River cryptantha). Occasionally, White Bluffs bladderpod is numerous enough at some locations to be subdominant.

Because of its recent discovery and limited range, little is known of the subspecies' life-history requirements. In a presentation of preliminary life-history studies, Dunwiddie *et al.* (2002, p. 7) reported that most individuals reach reproductive condition in their first or second year, most adult plants flower every year, and the lifespan of this short-lived subspecies is probably 4 to 5 years. The population size appears to vary from year to year (see Table 2), and the survival of seedlings and adults appears to be highly variable (Dunwiddie *et al.* 2002, p. 8); however, more monitoring is needed to determine the magnitude and frequency of high- and low-number years, as well as to obtain an understanding of the causes of these annual fluctuations (Evans *et al.* 2003, p. 64). Monitoring by Monument staff (Newsome 2011, p. 5) suggests that the annual population fluctuations appear to be tied to environmental conditions, such as seasonal precipitation and temperature.

#### Historical Range/Distribution

In 1996, White Bluffs bladderpod was only known from a single population that occurred along the upper edge of the White Bluffs of the Columbia River in Franklin County, Washington. The population was described to occur intermittently in a narrow band (usually less than 10 m (33 ft) wide) along an approximately 17-km (10.6-mi) stretch of the river bluffs (Rollins *et al.* 1996, p. 205).

#### Current Range/Distribution

White Bluffs bladderpod is still known only from the single population that occurs along the upper edge of the White Bluffs of the Columbia River, Franklin County, Washington, although the full extent of the subspecies' occurrence has now been described. Most of the subspecies distribution (85 percent) is within lands owned by the Department of Energy (DOE) and once managed by the Washington Department of Fish and Wildlife as the Wahluke Wildlife Area (USFWS 2008, p. 1–3). This land remains under DOE ownership, and is managed by the Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge (Monument). The remainder of the subspecies' distribution is on private land (Newsome 2011, pers. comm.) and WDNR land (Arnett 2012, pers. comm.).

#### Population Estimates/Status

The size of the population varies considerably between years. Censuses in the late 1990s estimated more than 50,000 flowering plants in high population years (Evans *et al.* 2003, p. 3–2) (see Table 2). Since 1997 to 1998 when the monitoring transects currently used were selected, the population ranged between an estimated low of 9,650 plants in 2010 to an estimated high of 58,887 plants in 2011 (see Table 2). Following the monitoring period in 2007, a large wildfire burned through the northern portion of the population within the monitoring transects. Annual monitoring was conducted through 2011 to attempt to determine the effects of fire on White Bluffs bladderpod. The monitoring results indicated that, when burned and unburned transects were compared, plants in burned transects appear to have rebounded to some extent (Newsome 2011, p. 5), although the data have too much variability to discern that difference. However, the burned transects appeared to have a mean of 24 percent fewer plants than in the unburned transects.

TABLE 2—ESTIMATED\* POPULATION SIZE OF WHITE BLUFFS BLADDERPOD

Year	10-Transect sample	20-Transect sample
1997 .....	14,034	N/A
1998 .....	31,013	32,603
1999 .....	20,354	21,699
2002 .....	11,884	12,038
2007 .....	29,334	28,618
2008 .....	16,928	18,400
2009 .....	16,569	20,028
2010 .....	9,650	9,949
2011 .....	47,593	58,887

\* Mean number of plants per transect × total number of transects along permanent 100-m (328-ft) monitoring transects (from Newsome 2011, p. 3). An additional 20-transect sample was added to monitoring after 1997 to increase statistical confidence.

The high variability in estimated population numbers was confirmed by the 2011 data, which documented the highest population estimate since monitoring began in 1997, even though it immediately followed the year representing the lowest estimate (2010). May 2011 was identified by the Hanford Meteorological Station (<http://www.hanford.gov/page.cfm/HMS>) as the fifth coolest and seventh wettest month of May recorded on the installation since its establishment in 1944 (Newsome 2011, p. 2). This environment likely provided ideal conditions for germination, growth, and flowering for this year's population following a rather moist fall and mild winter season. (Autumn 2010

precipitation was 4.6 cm (21.8 inches) above average; winter 2011 precipitation was 0.6 cm (0.24 inches) below average.) (<http://www.hanford.gov/page.cfm/hms/products/seaprcp>).

### Summary of Comments and Recommendations

We requested written comments from the public on the proposed designation of critical habitat for the Umtanum desert buckwheat and White Bluffs bladderpod and the associated draft economic analysis. The comment period associated with the publication of the proposed rule (77 FR 28704) opened on May 15, 2012, and closed on July 16, 2012. We did not receive any requests for a public hearing. We also contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule and draft economic analysis during the comment period.

During the comment period, we received two public comment letters addressing the proposed listing for both species. We did not receive any public comments on the proposed critical habitat designation or draft economic analysis. All substantive information provided during the comment period has either been incorporated directly into this final determination or is addressed below. Comments are addressed in the following summary and incorporated into the final rule as appropriate.

#### Peer Review

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from five knowledgeable individuals with scientific expertise that included familiarity with the species, regional botanical knowledge, the geographical region in which the species occur, and conservation biology principles. We received responses from four of the peer reviewers.

We reviewed all comments received from peer reviewers for substantive issues and new information regarding the listing and designation of critical habitat for the two plant species. The peer reviewers generally concurred with our methods and conclusions, and provided editorial comments, taxonomic clarifications, additional citations, and information on species distribution, arid lands ecology, geology, and habitat associations to improve the final rule. These comments have been incorporated into the final rule, but have not been individually addressed below. The substantial peer reviewer comments are addressed in the

following summary and have been incorporated into the final rule as appropriate.

#### Peer Reviewer Comments

(1) *Comment:* One peer reviewer commented that delineating critical habitat for Umtanum desert buckwheat based on the presumed range of pollinators was questionable, as there is little evidence regarding the relative importance of pollinators for this species in comparison with any other critical aspect of its natural history. The reviewer recommended that the boundary be revised to include a several-thousand-acre polygon around the population, with focused actions to make the area less fire-prone (e.g., establishing firebreaks and controlling cheatgrass). Another peer reviewer commented that the proposed critical habitat would adequately provide for the needs of the species and potential pollinators as long as funds are allocated to minimize invasive species and increase the native flora that may have been reduced by invasive species.

*Our Response:* We acknowledge that the risk of wildfire poses a significant threat to Umtanum desert buckwheat. The larger landscape where this species occurs is within a conservation status, is federally owned, and has restricted public access. Threats, including wildfires, invasive species, and management actions will continue in the larger landscape regardless of whether the area is designated as critical habitat. The critical habitat designation for Umtanum desert buckwheat is based on the best available scientific information regarding the biological needs of the species. We used data regarding flight distances of generalist pollinators to delineate a critical habitat polygon that is large enough to support the existing population and ensure its survival and recovery. Areas designated as critical habitat must be essential to the conservation of a species under section 3(5)(A) of the Act. We are unaware of any scientific information that would support an argument that a several-thousand-acre polygon around each of the populations is essential to the conservation of either Umtanum desert buckwheat or White Bluffs bladderpod. As previously stated, management actions to improve habitat and reduce the threat of wildfire will be identified and incorporated within the recovery planning process, as required under section 4(f) of the Act. That process will consider each of the threats to the species, and develop recovery tasks necessary to address wildfire, invasive species, pollinator habitat, and

the other factors impacting the population.

(2) *Comment:* For White Bluffs bladderpod, one peer reviewer stated that it seems illogical to define critical habitat using presumed pollinator movement ranges (see *Comment* 1), but not address adjacent croplands where agricultural activities (e.g., conversion of shrub steppe to cropland, use of herbicides and pesticides, etc.) may be detrimental to pollinators of the species. Another peer reviewer stated it would seem more prudent to define critical habitat in ways that address the most critical potential threats (i.e., slope failure and landslides), and questioned the rationale used to support a conclusion that “lands that are under agricultural use are not included in the proposed critical habitat designation.”

*Our Response:* We appreciate the comments. However, in accordance with section 3(5)(A) of the Act, critical habitat can only be designated for: (1) Specific areas within the geographic area occupied by the species at the time of listing that contain the physical or biological features essential to the species' conservation, and which may require special management considerations or protections; and (2) specific areas outside the geographical area occupied by the species at the time of listing that are essential to its conservation. Lands that are under agricultural use do not satisfy either of these definitions, since they do not function as habitat for White Bluffs bladderpod or pollinators, as a result of land conversion, irrigation, loss of the soil horizon, and presence of agricultural chemicals. Each of the threats that have been identified for both species will be considered during the recovery planning process under section 4(f)(1) of the Act, and section 7 consultations with Federal agencies under section 7(a)(2).

### Critical Habitat Designation for Umtanum Desert Buckwheat and White Bluffs Bladderpod

#### Background

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical and biological features

(a) Essential to the conservation of the species; and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use, and the use of, all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the prohibition against Federal agencies carrying out, funding, or authorizing the destruction or adverse modification of critical habitat. Section 7(a)(2) requires consultation on Federal actions that may affect critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner seeks or requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the Federal action agency's and the applicant's obligation is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species, and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific

and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that when combined compose the features essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographical area occupied by a species only when a designation limited to its current range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished

materials and expert opinion or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be required for recovery of the species. Areas that are important to the conservation of the species, but are outside the critical habitat designation, will continue to be subject to: (1) Conservation actions we implement under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) the prohibitions of section 9 of the Act if certain actions occurring in these areas may affect the species. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts warrants otherwise.

#### *Physical or Biological Features*

In accordance with sections 3(5)(A)(i) and 4(b)(1)(A) of the Act and the regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied at the time of listing to designate as critical habitat, we consider the physical and biological features (PBF's) essential to the conservation of the species that may require special management considerations or protection. These may include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, or rearing (or development) of offspring; and

(5) Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species.

We derive the specific PBFs required for Umtanum desert buckwheat and White Bluffs bladderpod from studies of each species' habitat, ecology, and life history as described above in the final listing rule. We have determined that the PBFs described below are essential for these species. The criteria used to identify the geographical location of the designated critical habitat areas for both species are described following the *Final Critical Habitat Designation* sections below (see *Criteria Used To Identify Critical Habitat*).

#### *Criteria Used To Identify Critical Habitat*

As required by section 4(b)(2) of the Act, in developing this final rule we used the best scientific data available to designate critical habitat for both Umtanum desert buckwheat and White Bluffs bladderpod. We reviewed available information that pertains to the habitat requirements of these species. In accordance with the Act and its implementing regulations at 50 CFR 424.12(e), we also consider whether designating additional areas outside those currently occupied as well as those occupied at the time of listing is necessary to ensure the conservation of the species. These sources of information included, but were not limited to:

1. Data used to prepare the final rule to list the species;
2. Information from biological surveys;
3. Peer-reviewed articles, various agency reports and databases from the Washington Department of Natural Resources Natural Heritage Program and the Hanford National Monument/Saddle Mountain National Wildlife Refuge;
4. Information from the U.S. Department of Energy and other governmental cooperators;
5. Information from species experts;
6. Data and information presented in academic research theses; and
7. Regional Geographic Information System (GIS) data (such as species occurrence data, land use, topography, aerial imagery, soil data, and land ownership maps) for area calculations and mapping.

The long-term survival and recovery of Umtanum desert buckwheat and White Bluffs bladderpod is dependent upon protecting existing populations by maintaining ecological function within these sites, including preserving the integrity of the unique soils and connectivity between occurrences to

facilitate pollinator activity. It is also dependent on maintaining these areas free of habitat-disturbing activities, including trampling, the exclusion of invasive, nonnative plant species, and managing the risk of wildfire. Because the areas of unique soils cover a relatively small area within the larger shrub steppe matrix, we did not restrict the designation to individual occupied patches, but included adequate adjacent shrub steppe habitat to provide for ecosystem function. This contiguous habitat provides the requisite physical or biological features for both Umtanum desert buckwheat and White Bluffs bladderpod, including diverse native flowering plants and habitat to support pollinators, and provides the essential feature of habitat free from disturbances, such as invasive species and recreational trampling. We used the following criteria to select areas for inclusion in critical habitat: (a) The geographical areas containing the entire distribution of habitat occupied by Umtanum desert buckwheat and White Bluffs bladderpod at the time of listing, because they are each found in only single populations and our goal is to maintain the current species extent and genetic variability; (b) areas that provide the physical and biological features necessary to support the species' life-history requirements; and (c) areas that provide connectivity within and between habitat for each species, and adjacent shrub steppe habitat that provides for pollinator life-history needs.

The first step in delineating critical habitat units was to identify all areas that contained Umtanum desert buckwheat or White Bluffs bladderpod populations, which was accomplished during the summer of 2011. We are designating critical habitat within and around all occurrences of both populations to conserve genetic variability. These areas are representative of the entire known historical geographic distribution of the species. We then analyzed areas outside the populations to identify unoccupied habitat areas essential for the conservation of the species. The designations take into account those features that are essential to Umtanum desert buckwheat or White Bluffs bladderpod and the condition of the surrounding landscape features necessary to support pollination.

We do not know if the lack of pollinators is a limiting factor, but in the absence of other information and knowing that both species are largely insect-pollinated, we believe it is prudent to identify an area adjacent to the occupied areas as unoccupied

critical habitat to support pollinator species. The outer boundary of the critical habitat designation was primarily determined based on the flight distances of insect pollinators, which are essential to the conservation of both species. Using GIS, we included an area of native shrub steppe vegetation approximately 300 m (980 ft) around the population to provide habitat of sufficient quantity and quality to support Umtanum desert buckwheat and White Bluffs bladderpod. This boundary was selected because we believe it provides the minimum area needed to sustain an active pollinator community for both species, based on the best available scientific information (see Arnett 2011b; Evans pers. comm., 2001, discussed below). This distance does not include all surrounding habitat potentially used by pollinators, but provides sufficient habitat for those pollinators that nest, feed, and reproduce in areas adjacent to the occupied critical habitat areas.

Although Umtanum desert buckwheat and White Bluffs bladderpod are visited by a variety of likely pollinators, only one insect pollinator species has been verified to date; the bumblebee (*Bombus centralis*) has been confirmed as a pollinator for Umtanum desert buckwheat (Arnett 2011b, pers. comm.). As stated earlier, *Bombus* did not appear to be an appropriate surrogate to determine pollinator distance for either Umtanum desert buckwheat or White Bluffs bladderpod because of their relatively long-distance foraging capabilities. Instead, we delineated an effective pollinator use area based on the flight distances of solitary bees, a group of important noncolonial pollinators with a relatively limited flight distance. Research literature on flight distances was available for this group (Gathmann and Tschardt (2002, p. 758), of which numerous representatives of the genera *Chelostoma*, *Megachile*, and *Osmia* are found in shrub steppe habitat in the Hanford Reach area. Species within other solitary bee genera such as *Andrena*, *Anthophora*, *Habropoda*, *Hoplitis*, and *Lasioglossum* have also been identified on the Hanford Installation (Evans 2011, pers. comm.). This methodology assumes that potential pollinators with long-range flight capabilities would be able to use this proximal habitat as well (see *Physical and Biological Features* section).

Because the population occurrences of Umtanum desert buckwheat and White Bluffs bladderpod are linear in arrangement, we established the occupied critical habitat areas by

connecting the known coordinates for occurrences, using GIS. The mean width for the occupied areas was estimated based on monitoring and transect data compiled by species experts. The estimated mean width for Umtanum desert buckwheat was determined to be 30 m (100 ft), and 50 m (165 ft) for White Bluffs bladderpod. We then established a 300-m (980-ft) unoccupied critical habitat polygon surrounding the mean occupied habitat width to identify insect pollinator habitat that is essential for the conservation of both species. We then mapped the critical habitat unit boundaries for each of the two species based on the above criteria, using aerial imagery, 7.5 minute topographic maps, contour data, WDNR Wildlife Natural Heritage Program and Washington Department of Transportation data to depict the critical habitat designation, gather ownership, and acreage information.

When determining critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, other structures, tilled farm lands and orchards on private property, because such lands lack physical or biological features for Umtanum desert buckwheat and White Bluffs bladderpod. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Therefore, once the critical habitat designation is finalized, a Federal action involving such developed lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification, unless the specific action would affect the physical and biological features in the adjacent critical habitat.

#### Umtanum Desert Buckwheat

##### Space for Individual Population Growth and for Normal Behavior

Umtanum desert buckwheat is highly restricted in its distribution. The only known population occurs at elevations ranging between 340–400 m (1,115–1,310 ft) on flat to gently sloping substrate at the top edge of a steep, north-facing basalt cliff of Umtanum Ridge overlooking the Columbia River. Approximately 5,000 plants occur in a narrow band 1.6 km (1 mi) in length and generally less than 30 m (100 ft) wide (Reveal *et al.* 1995, p. 353). However, individual plants have been found up to 150 m (490 ft) above the cliff breaks (Arnett 2011b, pers. comm.), and scattered plants occur on the steep cliff-

face below the breaks (Dunwiddie *et al.* 2001, p. 60).

Umtanum desert buckwheat is found exclusively on soils over exposed basalt from the Lolo Flow of the Wanapum Basalt Formation at the far southeastern end of Umtanum Ridge in Benton County, Washington. This type of landform in the lower Columbia Basin is determined by the underlying basalts, which may be exposed above the soil on ridge tops or where wind and water erode the fine soils away (Sackschewski and Downs 2001, p. 2.1.1). The Lolo flow surface material commonly has a high porosity and permeability. The cliff area has weathered to pebble- and gravel-sized pieces of vesicular basalt (basalt that contains tiny holes formed due to gas bubbles in lava or magma) and is sparsely vegetated where the species is found. It is unknown if the close association of Umtanum desert buckwheat with the lithosols of the Lolo Flow is related to the chemical composition or physical characteristics of the particular parent bedrock on which it is found, or other factors (Reveal *et al.* 1995, p. 354); however, that particular mineralogy is not known from any other location.

Therefore, based on the information above, we identify weathered Wanapum basalt cliffs, and adjacent outcrops, cliff breaks, and flat or gently sloping cliff tops with exposed pebble and gravel soils as a physical or biological feature essential to the conservation for Umtanum desert buckwheat.

##### Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements

The presence of unique soil structure and/or chemistry may determine where a rare plant species exists. Umtanum desert buckwheat is found exclusively on pebbly lithosol soils over exposed basalt from the Lolo Flow of the Priest Rapids Member of the Wanapum Basalt Formation. The flow surface material commonly has a high porosity and permeability and typically contains small (<5 mm, (0.2 in)) crystals of the mineral olivine and rare (occasional) clusters of plagioclase crystals, and differs from the other members of the Wanapum Formation. Basalts of the Lolo Flow contain higher levels of titanium dioxide and lower levels of iron oxide than the neighboring Rosalia Flow, also of the Priest Rapids Member (Reidel and Fecht 1981, p. 3–13).

It is unknown if the distribution of Umtanum desert buckwheat prior to European settlement was different from the species' current distribution, but it is likely that the species has been confined to this location during at least

the last 150 years, which indicates an isolated soil exposure, unique within the broader Columbia Basin landscape. The physiological and soil nutritional needs of Umtanum desert buckwheat are not known at this time. Other locations containing apparently suitable habitat have been intensively searched since the species' discovery in 1995, and no additional individuals or populations have been found to date. The factors limiting the species' distribution are unknown, but could be related to microsite differences (such as nutrient availability, soil microflora, soil texture, or moisture). Additional research is needed to determine the specific nutritional and physiological requirements for Umtanum desert buckwheat.

Therefore, based on the information above, we identify the pebbly lithosol talus soils derived from surface weathering of the Lolo Flow of the Priest Rapids Member of the Wanapum Basalt Formation as a physical and biological feature essential to the conservation for Umtanum desert buckwheat. These areas are sparsely vegetated, with less than 10 percent estimated total cover (including Umtanum desert buckwheat) within the population and less than 5 percent cover by species other than Umtanum desert buckwheat, and less than 1 percent nonnative or invasive plants (Arnett 2001, pers. comm.). Areas of sparse vegetation are required to minimize nonnative plant competition, minimize conditions that promote the accumulation of fuels, and provide for the recovery of the species.

##### Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring

The availability of insect pollinators is essential to conserve Umtanum desert buckwheat. Based on the results of a pollinator exclusion study, the species is probably capable of at least limited amounts of self-pollination, although the percentage of seedset in the absence of pollinators appears to be low (TNC 1998, p. 8; Reveal *et al.* 1995, p. 355). A variety of potential insect pollinators has been observed on Umtanum desert buckwheat flowers, including ants, beetles, flies, spiders, moths, and butterflies (TNC 1998, p. 8). Wasps from the families *Vespidae* and *Typhiidae* and from the species *Crioscioia* have been observed near, but not on, the species. A bumble bee species, *Bombus centralis* (no common name), has also been observed utilizing the flowers of Umtanum desert buckwheat (Arnett 2011b, pers. comm.). Insect collection and identification efforts by Washington State University on the Hanford Reach

documented approximately 2,500 different species of invertebrates, 42 of which were new to science (WNPS 2004, p. 3).

Since pollination is essential to the conservation of Umtanum desert buckwheat, we evaluated alternatives for determining the effective pollinator distance for this species. Since specific known pollinators are mostly unknown for the species and the species is likely frequented by several pollinators, we investigated delineating an effective pollinator distance based on foraging distances of the species' only known pollinator, the bumble bee (*Bombus* spp.). Bumble bee species are internally guided to use a plant species as long as flowers are rewarding and nearby, but will otherwise change to different species (Chittka *et al.* 1997, p. 248). Foraging ranges for *Bombus* are greater and consistent within species; however, there are substantial differences between species in foraging ranges and the size of the areas they utilize. Knight *et al.* (2005, p. 1,816) observed a maximum foraging distance between 450–760 m (1,475–2,500 ft), and foraging ranges between 62–180 ha (150–450 ac), based on studies of four *Bombus* species. Because of these conspecific differences, we concluded that bumble bee foraging distances may not be representative of the suite of pollinators that may be available to Umtanum desert buckwheat. Based on the limited distribution of Umtanum desert buckwheat and the lack of foraging data for *Bombus centralis*, we determined that generalized *Bombus* foraging range data may not be an appropriate surrogate for determining Umtanum desert buckwheat pollinator distance requirements.

We next considered using the flight distances of solitary bees (individual, noncolonial bees) to determine the effective pollinator distance for the species. Numerous Families of this Order (*Hymenoptera*) have been observed in shrub steppe habitats within the Hanford Reach, including the Genera *Andrena*, *Anthophora*, *Chelostoma*, *Habropoda*, *Hoplitis*, *Lasioglossum*, *Megachile*, and *Osmia*, among others (Evans 2011, pers. comm.) and are likely to be among the pollinators of Umtanum desert buckwheat.

Solitary bees have fairly short foraging distances within similar habitat types, which is suggested as being between 150–600 m (495–1,970 ft) (Gathmann and Tscharrntke (2002, pp. 760–762)). Three genera are found in common with those studied in Gathmann and Tscharrntke (2002) in the Hanford Reach: *Chelostoma*, *Megachile*, and *Osmia*.

Although the specific insect pollinator species and their foraging distances are not known, we believe 300 m (980 ft) represents a reasonable mid-range estimate of the area needed around the Umtanum desert buckwheat population to provide sufficient habitat for the pollinator community. As noted above, many other insects likely contribute to the pollination of this species, and some may travel greater distances than solitary bees. However, these pollinators may also forage, nest, overwinter, or reproduce within 300 m (980 ft) of Umtanum desert buckwheat plants. As a result, we limited the Umtanum desert buckwheat pollinator support area to 300 m (980 ft) around the population, based on the rationale that pollinators using habitat farther away may not be as likely to contribute to the conservation and recovery of this species.

Vegetation cover in the vicinity of Umtanum desert buckwheat is low when compared with other shrub steppe sites, which may be related to substrate chemistry. Common perennial associates and habitat for the pollinators listed above include *Artemisia tridentata* (Wyoming big sagebrush), *Grayia spinosa* (spiny hopsage), *Krascheninnikovia lanata* (winterfat), *Eriogonum sphaerocephalum* (round-headed desert buckwheat), *Salvia dorrii* (purple sage), *Hesperostipa comata* (needle and thread grass), *Pseudoroegneria spicata* (bluebunch wheatgrass), *Poa secunda* (Sandberg's bluegrass), *Sphaeralcea munroana* (Munro's globemallow), *Astragalus caricinus* (buckwheat milkvetch), and *Balsamorhiza careyana* (Carey's balsamroot). Common annual associates include *Bromus tectorum* (cheatgrass), *Sisymbrium altissimum* (tumblemustard), *Phacelia linearis* (threadleaf phacelia), *Aliciella leptomeria* (great basin gilia), *Aliciella sinuata* (rosy gilia), *Camissonia minor* (small evening primrose), *Mentzelia albicaulis* (whitestem blazingstar), and *Cryptantha pterocarya* (wing-nut cryptantha) (Reveal *et al.* 1995, p. 354; Caplow and Beck 1996, p. 40, Beck 2012, pers. comm.). Although percent vegetative cover is low in close proximity to *E. codium*, species diversity within the adjacent plant community is fairly high. Nearby vegetative patches with more dense vegetative cover offer increased vertical habitat structure and plant species diversity within the foraging distances of potential pollinators.

In order for Umtanum desert buckwheat genetic exchange to occur, pollinators must be able to move freely between plants. Additional pollen and nectar sources (other plant species

within the surrounding sagebrush vegetation) are also needed to support pollinators when the species is not flowering. This surrounding and adjacent habitat will protect soils and pollinators from disturbance, slow the invasion of the site by nonnative species, and provide a diversity of habitats needed by Umtanum desert buckwheat and its pollinators. Therefore, based on the information above, we identify the presence of insect pollinators as a physical and biological feature essential to the conservation for Umtanum desert buckwheat. Insect pollinators require a diversity of native plants, whose blooming times overlap to provide sufficient flowers for foraging throughout the seasons, nesting and egg-laying sites, appropriate nesting materials, and sheltered, undisturbed places for hibernation and overwintering.

#### Habitats Protected From Disturbance or Representing Historical, Geographical, and Ecological Distributions

The Umtanum desert buckwheat population has a discontinuous distribution along a narrow, 1.6-km (1-mi) long portion of Umtanum Ridge (Dunwiddie *et al.* 2001, p. 59). The entire known population exists within a narrow corridor at the top edge of the steep, north-facing basalt cliffs where human traffic could be expected to concentrate. The plants respond negatively to trampling or crushing and are extremely sensitive following such damage. In one instance, within 2 days of being run over by trespassing dirt bikes, portions of damaged plants showed signs of further decline, and in some cases mortality, as evidenced by damaged plants that later died (TNC 1998, p. 62).

Fire appears to readily kill the slow-growing Umtanum desert buckwheat plants, especially in areas with higher fuel levels. Because of the rocky talus soils and a relatively low fire frequency, the species is confined to a few meters of upper cliff slope, cliff breaks, and tops. Fires increase the risk of invasion of nonnative or invasive species, particularly cheatgrass, which competes with Umtanum desert buckwheat for space and moisture. In turn, the establishment and growth of highly flammable and often continuous cheatgrass increases the likelihood of fire, potentially elevating the risk of impacting the Umtanum desert buckwheat population in the future. The substrate that supports Umtanum desert buckwheat likely had a lower vegetation cover prior to the introduction of cheatgrass in the 1800s. Fire is a primary threat to Umtanum desert

buckwheat, and will likely become a greater threat if the frequency or severity of fires increases (TNC 1998 p. 9; Dunwiddie *et al.* 2001, pp. 59, 62, 66).

Therefore, based on the information above, we identify the stable cliff and soil structure that is protected from human-caused trampling and at a low risk of wildfire as a physical and biological feature essential to the conservation for Umtanum desert buckwheat. This habitat contains little or no surface disturbance and is surrounded by diverse native pollinator habitat.

#### Primary Constituent Elements for Umtanum Desert Buckwheat

Under the Act and its implementing regulations, we are required to identify the physical and biological features essential to the conservation of Umtanum desert buckwheat, focusing on the features' primary constituent elements. We consider primary constituent elements to be the specific compositional elements of physical and biological features that are essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and the habitat characteristics required to sustain the species' life-history process, we have determined that the primary constituent elements specific to Umtanum desert buckwheat are:

1. Primary Constituent Element 1—North to northeast facing, weathered basalt cliffs of the Wanapum Formation at the eastern end of Umtanum Ridge in Benton County that contain outcrops, cliff breaks, slopes, and flat or gently sloping cliff tops with exposed pebble and gravel soils;
2. Primary Constituent Element 2—Pebbly lithosol talus soils derived from surface weathering of the top of the Lolo Flow of the Priest Rapids Member of the Wanapum Formation;
3. Primary Constituent Element 3—Sparsely vegetated habitat (less than 10 percent total cover), containing low amounts of nonnative or invasive plant species (less than 1 percent cover);
4. Primary Constituent Element 4—The presence of insect pollinator species; and
5. Primary Constituent Element 5—The presence of native shrub steppe habitat within the effective pollinator distance (300 m (approximately 980 ft)) around the population.

Umtanum desert buckwheat occurs only as a single population located within a single site. With this designation of critical habitat, we intend to identify the physical and biological features essential to the conservation of the species, through the identification of the features' primary constituent elements sufficient to support the life-history processes of the species.

#### *Special Management Considerations or Protection*

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features that are essential to the conservation of the species and that may require special management considerations or protection. All areas designated as critical habitat as described below may require some level of management to address the current and future threats to the physical and biological features essential to the conservation of Umtanum desert buckwheat. In all of the described units, special management may be required to ensure that the habitat is able to provide for the biological needs of the species.

Further studies leading to an enhancement or reintroduction plan may be necessary to increase population size and prepare for recovery post-wildfire. More research is needed to determine habitats most suitable for expansion of the current population. In summary, special management considerations or protections should address activities that would be most likely to result in the loss of Umtanum desert buckwheat plants or the disturbance, compaction, or other negative impacts to the species' habitat. These activities could include, but are not limited to, recreational activities and associated infrastructure, off-road vehicle activity, dispersed recreation, wildfire, and wildfire suppression activities.

Special management considerations or protection will conserve the primary constituent elements for the species. Management activities that could ameliorate these threats include, but are not limited to, the fire management plan that has been completed for the Hanford installation (DOE 2011, p. 93) and recently revised to incorporate more detailed management objectives and standards. Though not intended to

specifically address Umtanum desert buckwheat, implementation of this plan will contribute to the protection of the primary constituent elements (and physical or biological features) by: (1) Using a map of "sensitive resources" on the site during implementation, including the location of Umtanum desert buckwheat habitat; (2) requiring a biologist to assist the command staff in protecting these environments during wildfire suppression efforts; and (3) restricting public access to the entire Umtanum desert buckwheat site, including the pollinator use area. Public access without security clearance is currently prohibited at the Umtanum desert buckwheat site, reducing the risk of trampling or crushing the plants by ORV use. Special management to protect the designated critical habitat areas and the features essential to the conservation of Umtanum desert buckwheat from the effects of the current wildfire regime may include preventing or restricting the establishment of invasive, nonnative plant species, post-wildfire restoration with native plant species, and reducing the likelihood of wildfires affecting the population and nearby plant community components. These actions may be achieved by detailed fire management planning by the DOE, including rapid response and mutual support agreements between the DOE, the Monument, the U.S. Department of the Army, Bureau of Land Management, and the Washington Department of Fish and Wildlife for wildfire control. These agreements should contain sufficient detail to identify actions by all partners necessary to protect habitat for Umtanum desert buckwheat from fire escaping from other ownerships.

#### **Final Critical Habitat Designation**

We are designating one unit as critical habitat for the Umtanum desert buckwheat population. The critical habitat area described below constitutes our best assessment of areas that meet the definition of critical habitat for Umtanum desert buckwheat. Within this unit, no subunits have been identified.

The approximate size and ownership of the designated Umtanum Ridge critical habitat unit is identified in Table 3 below. The single unit contains currently occupied critical habitat and unoccupied habitat surrounding it.

TABLE 3—DESIGNATED CRITICAL HABITAT UNIT FOR UMTANUM DESERT BUCKWHEAT  
[Area estimates reflect all land within the critical habitat unit boundaries; values are rounded to the nearest tenth]

Unit name	Land ownership	Occupied critical habitat in hectares (acres)	Unoccupied critical habitat in hectares (acres)	Percent by ownership	Total hectares (acres)
Umtanum Ridge, WA .....	Federal .....	5.7 (14.2)	133.5 (329.9)	100	139.3 (344.1)
	State .....	0	0	0	0
	Private .....	0	0	0	0
Unit Total .....	.....	5.7 (14.2)	135.5 (329.9)	100	139.3 (344.1)

## White Bluffs Bladderpod

### *Physical and Biological Features*

#### Space for Individual and Population Growth and for Normal Behavior

White Bluffs bladderpod is only known from a single population that occurs in a narrow band approximately 10 m (33 ft) wide by 17 km (10.6 mi) long, at the upper edge of the White Bluffs of the Hanford Reach. The subspecies only occurs at the upper surface areas of a near-vertical exposure of paleosol (ancient, buried soil whose composition may reflect a climate significantly different from the climate now prevalent in an area). This surface material overlies several hundred feet of easily eroded sediments of the Ringold Geologic Formation, a sedimentary formation made up of soft Pleistocene lacustrine deposits of clay, gravel, sand, and silt (Newcomb 1958, p. 328).

The upper part of the Ringold Formation is a heavily calcified and silicified cap layer that exists to a depth of at least 4.6 m (15 ft). This layer is geologically referred to as “caliche,” although it lacks the nitrate constituents found in true caliche. The caliche-like layer is a resistant caprock underlying a 275–305 m (900–1,000 ft) plateau extending north and east from the White Bluffs (Newcomb 1958, p. 330).

The entire population of White Bluffs bladderpod is down-slope of irrigated agricultural land, and is being impacted to differing degrees by landslides induced by water-seepage (see Factor A). The potential for landslide is greatest in the southern portion of the subspecies’ distribution where irrigated lands are closer to, or directly adjacent to, the bluffs (Lindsey 1997, p. 12). In addition, field investigations have determined that *Lesquerella* (now *Physaria*) plants can be outcompeted by nonnative, weedy plant species associated with irrigation projects and other disturbance (TNC 1998, p. 5).

Therefore, based on the information above, we identify the weathered cliffs at approximately 210–275 m (700–900 ft) above sea level of the White Bluffs of

the Ringold Formation exposed by natural erosion as a physical and biological feature essential to the conservation for White Bluffs bladderpod. The habitat includes the adjacent cliff breaks, moderate to gentle slopes (<100 percent slope) to the toe of slope, and flat or gently sloping cliff tops with exposed alkaline paleosols. This habitat is stable with a minimal amount of landslide occurrence.

#### Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements

The White Bluffs area was submerged during the larger ice-age floods until about 3 million years ago and was protected from high flow events by the Saddle Mountains to the north. As a result, the area experienced little or no erosion. A thin layer of ancient slackwater flood deposits overlay the older paleosols and resistant cap deposits (Bjornstad and Fecht 2002, p. 15). White Bluffs bladderpod occurs only on or near exposed, weathered, highly alkaline, calcium carbonate cap deposits and may be an obligate calciphile (a plant which grows well on chalky or alkaline soils), as are many of the endemic *Lesquerella* (now *Physaria*) species (Caplow 2006, p. 3).

White Bluffs bladderpod plants are found on several different types of soil substrates, (e.g., paleosol, volcanic tuff, caliche, and ancient flood deposits), each of which presumably have a relatively high percentage of calcium carbonate (TNC 1998, p. 5). The subspecies is occasionally observed on the lower slopes of the White Bluffs, which may be related to ancient landslide zones or weathering and disturbance factors that deposit alkaline soils down slope (Caplow and Beck 1996, p. 42). Although there are scattered small exposures of similar caliche substrate in coulees (i.e., deep ravines or gulches that are usually dry, although formed by water) to the north, surveys have failed to detect the subspecies in those areas (Rollins *et al.* 1996, p. 206). The physiological

relationship between White Bluffs bladderpod and the high-calcium carbonate soils of the White Bluffs is uncertain; however, the particular combination of exposed soil types where the subspecies occurs is not known from any other location.

Therefore, based on the information above, we identify the weathered alkaline paleosols and mixed soils of the Ringold Formation that occur in a narrow band within and around the exposed caliche-like cap containing a high percentage of calcium carbonate as a physical and biological feature essential to the conservation of White Bluffs bladderpod. This habitat is associated with the White Bluffs, and occurs between 210–275 m (700–900 ft) in elevation.

#### Sites for Reproduction

Washington State University researchers on the Hanford Reach have identified approximately 2,500 different species of invertebrates, 42 of which are new to science (WNPS 2004, p. 3). Larvae of a species of *Cecidomyiid* fly have been observed infesting and destroying flowering buds of White Bluffs bladderpod, and another unidentified insect species has been observed boring small holes in young seed capsules and feeding on developing ovules, although the overall positive or negative effects of these insect species to the plant are unknown. White Bluffs bladderpod appears to be served by several pollinators, including butterflies, flies, wasps, bumblebees, moths, beetles, and ant species. The presence of nearby habitat for pollinators is essential to conserving White Bluffs bladderpod, although little is currently known about the reproductive biology of the subspecies. The effective pollinator distance for this subspecies was determined by applying research on known flight distances of solitary bees (individual, noncolonial bees), which are known to pollinate native species and commonly observed in shrub steppe habitat within the Hanford Reach. Research suggests that

different species of solitary bees have fairly short foraging distances within similar habitat types (Gathmann and Tschardt 2002, p. 762); we assume other pollinating insects with longer-range flight capabilities would also utilize this habitat.

Solitary bees foraging distances within similar habitat types is suggested as being between 150–600 m (495–1,970 ft) (Gathmann and Tschardt (2002, pp. 760–762)). Absent specific data, we believe 300 m (980 ft) represents a reasonable mid-range estimate of the area needed around the White Bluffs bladderpod population to provide sufficient habitat for solitary bees and other pollinators. As noted above, many other insects likely contribute to the pollination of White Bluffs bladderpod, some may travel greater distances than solitary bees, and some likely use habitat within the 300-m (980-ft) pollinator area described above. However, we limited the White Bluffs bladderpod pollinator support habitat to 300 m (980 ft) around the population, based on the rationale that pollinators using habitat farther away may not be as likely to contribute to the conservation/recovery of this species.

Common plant species associated with White Bluffs bladderpod include: *Artemisia tridentata* (big sagebrush), *Poa secunda* (Sandberg's bluegrass), *Astragalus caricinus* (buckwheat milk-vetch), *Eriogonum microthecum* (slender buckwheat), and *Achnatherum hymenoides* (Indian ricegrass). Occasionally White Bluffs bladderpod is numerous enough at some locations to be subdominant.

Species diversity within the surrounding plant community is quite high, and the presence of increased vegetative cover nearby offers more habitat structure and plant species diversity within the presumed effective flight distances of potential pollinators. In order for genetic exchange to occur between White Bluffs bladderpod individuals, pollinators must be able to move freely between plants. Additional pollen and nectar sources (other plant species within the surrounding sagebrush vegetation) are also needed to support pollinators during times when White Bluffs bladderpod is not flowering. This surrounding and adjacent habitat will protect soils and pollinators from disturbance, slow the invasion of the site by nonnative species, and provide a diversity of habitats needed by White Bluffs bladderpod and its pollinators.

Therefore, based on the information above, we identify insect pollinators as a physical and biological feature essential to the conservation for White

Bluffs bladderpod. Insect pollinators require a diversity of native plants, surrounding and adjacent to White Bluffs bladderpod, whose blooming times overlap to provide them with sufficient flowers for foraging throughout the seasons and to provide nesting and egg-laying sites, appropriate nesting materials, and sheltered, undisturbed places for hibernation and overwintering of pollinator species.

#### Habitats Protected From Disturbance or Representing Historical, Geographical, and Ecological Distributions

White Bluffs bladderpod grows exclusively on the upper edge and upper face of the White Bluffs adjacent to the Columbia River, where human use can be high. The majority of the population occurs within the Wahluke Unit of the Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge. The Wahluke Unit is open for public access in some form in its entirety (USFWS 2008, p. 2–4). The habitat is arid, and vegetation is sparse within the population (Rollins *et al.* 1996, p. 206). The area supporting the population has approximately 10–15 percent total vegetative cover. Species other than White Bluffs bladderpod comprise less than 5 percent cover, and nonnative or invasive plant species comprise less than 1 percent cover (Arnett 2011c, pers. comm.). Much of this area (85 percent) is on public land that is managed as an overlay national wildlife refuge on the Monument, and accessible by vehicle from a nearby State highway. Off-road vehicle (ORV) use can impact the subspecies by crushing plants, destabilizing the soil, and spreading seeds of invasive plants. Within White Bluffs bladderpod habitat, ORV activity is prohibited on the Hanford Reach National Monument lands, intermittent on other Federal lands, and is most common on private lands. ORV use increases soil disturbance and erosion, and has been observed to destroy White Bluffs bladderpod individuals since this activity more often takes place on the more moderate slopes where the subspecies occurs (Caplow and Beck 1996, p. 42).

Fire threatens White Bluffs bladderpod by directly burning plants and opening new areas to the establishment of invasive species. A large wildfire burned through the northern portion of the population in July 2007. The observed decline in the number of plants counted after the 2007 fire was within a natural range of variability (between highest and lowest counts) determined during survey transects. The 2008–2011 monitoring

indicated the negative impacts of the burn were less than expected, since 76 percent of the previous population numbers were observed the following year. However, large-scale wildfires continue to be a threat to the existing population (Newsome 2008, pers. comm.; Goldie 2008, pers. comm.) by destroying pollinator habitat and facilitating competition with nonnative and invasive plant species that become established in openings created by wildfires.

Therefore, based on the information above, we identify stable bluff formations and caliche-like alkaline soils as a physical and biological feature essential to the conservation for White Bluffs bladderpod. These areas (1) are at a low risk of wildfire, (2) are not open to motorized recreational use, (3) are protected from human-caused trampling, (4) have little or no surface disturbance, (5) are sparsely vegetated (i.e., have 10 to 15 percent total vegetation cover), and (6) are surrounded by native pollinator habitat.

#### Primary Constituent Elements for White Bluffs Bladderpod

Under the Act and its implementing regulations, we are required to identify the physical and biological features essential to the conservation of White Bluffs bladderpod in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements to be the specific compositional elements of physical and biological features that are essential to the conservation of the subspecies.

Based on our current knowledge of the physical or biological features and the habitat characteristics required to sustain the subspecies' life-history process, we have determined that the primary constituent elements specific to White Bluffs bladderpod are:

1. Primary Constituent Element 1—Weathered alkaline paleosols and mixed soils overlying the Ringold Formation. These soils occur within and around the exposed caliche-like cap deposits associated with the White Bluffs of the Ringold Formation, which contain a high percentage of calcium carbonate. These features occur between 210–275 m (700–900 ft) in elevation.
2. Primary Constituent Element 2—Sparsely vegetated habitat (less than 10–15 percent total cover), containing low amounts of nonnative or invasive plant species (less than 1 percent cover).
3. Primary Constituent Element 3—The presence of insect pollinator species.
4. Primary Constituent Element 4—The presence of native shrub steppe

habitat within the effective pollinator distance (300 m (approximately 980 ft)).

5. Primary Constituent Element 5—The presence of stable bluff formations with minimal landslide occurrence.

White Bluffs bladderpod occurs only as a single population found within a single location. With this designation of critical habitat, we intend to identify the physical and biological features essential to the conservation of the subspecies, through the identification of the appropriate quantity and spatial arrangement of the primary constituent elements sufficient to support the life-history processes of the subspecies and the geographic areas outside of the range of the species that provide habitat for pollinators and are essential to conservation of the subspecies.

*Special Management Considerations or Protection*

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features that are essential to the conservation of the species and that may require special management considerations or protection. Because the public can access the White Bluffs bladderpod population, there is increased risk for plants being trampled and the spread of nonnative or invasive plants. To address this concern, the Hanford National Monument may develop a management plan on lands within its jurisdiction to protect the areas designated as critical habitat for White Bluffs bladderpod, while continuing to allow the public to enjoy the area. Recreational access may be

managed and controlled by directing foot traffic away from the subspecies, installing fencing, and establishing appropriate signage for pedestrians and ORV traffic across unprotected boundaries with private and State land.

Special management to protect the designated critical habitat areas from irrigation-induced landslides could include working with landowners through the U.S. Department of Agriculture (Natural Resources Conservation Service) to support water conservation practices to reduce excessive groundwater charging. This program could be designed to increase water efficiency as a savings and benefit to agricultural producers as well. Management considerations could include coordination with the Bureau of Reclamation to make water delivery to its customers more efficient and route wastewater return such that it reduces groundwater infiltration. Special management to protect the designated critical habitat area from the effects of wildfire may include preventing or restricting the establishment of invasive, nonnative plant species, post-wildfire restoration with native plant species, and reducing the likelihood of wildfires affecting the nearby plant community components. Many of these actions are already in place, and need only refinement through detailed fire management planning to protect designated critical habitat by the Monument.

In summary, special management considerations or protections should address activities that would be most likely to result in the loss of White Bluffs bladderpod plants or the

disturbance, compaction, or other negative impacts to the subspecies' habitat through landslides or other means. These activities could include, but are not limited to, dispersed recreation, off-road vehicle activity, wildfire, and wildfire suppression activities.

*Existing Conservation Measures*

The Service has completed a comprehensive conservation plan for the Hanford National Monument that provides a strategy and general conservation measures for rare plants that may benefit White Bluffs bladderpod. This strategy includes support for monitoring, invasive species control, fire prevention, propagation, reintroduction and GIS support (USFWS 2008, pp. 2–64—2–65). The conservation of White Bluffs bladderpod is addressed by acknowledging that protection is needed, and that the plant is required to be addressed in any management action (USFWS 2008, p. 3–95).

**Final Critical Habitat Designation**

We are designating one unit as critical habitat for the White Bluffs bladderpod population. The critical habitat area described below constitutes our best assessment of that portion of the landscape that meets the definition of critical habitat for this population. Within this unit, no subunits have been identified. The approximate size and ownership of the White Bluffs critical habitat unit is identified in Table 4. The unit includes both occupied and unoccupied habitat.

TABLE 4—DESIGNATED CRITICAL HABITAT AREA FOR WHITE BLUFFS BLADDERPOD  
[Area estimates reflect all land within critical habitat unit boundaries; values are rounded to the nearest tenth]

Unit name	Land ownership	Occupied critical habitat in hectares (acres)	Unoccupied critical habitat in hectares (acres)	Percent by ownership	Total hectares (acres)
White Bluffs .....	Federal .....	87 (216)	884 (2,184)	84	971 (2,400)
	State .....	2 (6)	14 (36)	2	17 (42)
	Private .....	19 (47)	151 (372)	15	170 (419)
Total .....	.....	109 (269)	1,049 (2,592)	100	1,158 (2,861)

**Effects of Critical Habitat Designation**

*Section 7 Consultation*

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of designated critical

habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action which is likely to jeopardize the continued existence of any species listed under the Act or result in the destruction or adverse modification of designated critical habitat.

Decisions by the Fifth and Ninth Circuit Courts of Appeals have invalidated our regulatory definition of “destruction or adverse modification” (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442F (5th Cir 2001)), and we do not rely

on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, the key factor in determining whether an action will destroy or adversely modify critical habitat is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Natural Resources Conservation Service or the Bureau of Reclamation). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect, or are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable. We define "reasonable and prudent alternatives" (at 50 CFR 402.02) as alternative actions identified during consultation that:

(1) Can be implemented in a manner consistent with the intended purpose of the action;

(2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction;

(3) Are economically and technologically feasible; and

(4) Would, in the Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

#### **Application of the Jeopardy and Adverse Modification Standards**

##### *Jeopardy Standard*

The jeopardy analysis usually expresses the survival and recovery needs of the species in a qualitative fashion without making distinctions between what is necessary for survival and what is necessary for recovery. Generally, the jeopardy analysis would focus on the rangewide status of Umtanum desert buckwheat or White Bluffs bladderpod, the factors responsible for those conditions, and what is necessary for the species to survive and recover. An emphasis would also be placed on characterizing the conditions of these species and their habitat in the area that would be affected by a proposed Federal action, and the role of affected populations in the survival and recovery of either Umtanum desert buckwheat or White Bluffs bladderpod. That context would then be used to determine the significance of the adverse and beneficial effects of the proposed Federal action, and any cumulative effects for purposes of making the jeopardy determination.

##### *Application of the "Adverse Modification" Standard*

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are

those that alter the physical or biological features to an extent that appreciably reduces the conservation value of the critical habitat for Umtanum desert buckwheat or White Bluffs bladderpod. As discussed above, the role of critical habitat is to support the various life-history needs and provide for the conservation of both species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for Umtanum desert buckwheat or White Bluffs bladderpod. These activities include, but are not limited to:

(1) Actions within or near designated critical habitat areas that would result in the loss, disturbance, or compaction of unique soils at cliff breaks, slopes, and flat to gently sloping upper surface areas. Such activities could include, but are not limited to:

- Recreational activities and associated infrastructure;
- Off-road vehicle activity;
- Dispersed recreation;
- New road construction or widening or existing road maintenance;
- New energy transmission lines, or expansion of existing energy transmission lines;
- Maintenance of existing energy transmission line corridors;
- Wildfire suppression and post-wildfire rehabilitation activities;
- Activities that result in the burial of seeds such that germinants do not successfully reach the soil surface to flower and set seed;
- Activities that result in compaction that smoothes the surface, causing seeds to be carried away by wind or water due to the lack of rough surface textures to capture seed;
- Activities that result in changes in soil composition leading to changes in the vegetation composition, such as an increase in invasive, nonnative plant cover within and adjacent to cliff break microsites, resulting in decreased density or vigor of individual Umtanum desert buckwheat or White Bluffs bladderpod plants; and
- Activities that result in changes in soil permeability and increased runoff that degrades, reduces, or eliminates habitat necessary for growth and reproduction of either species.

(2) Actions within or near designated critical habitat areas that would result in the significant alteration of intact, native, sagebrush-steppe habitat within the range of Umtanum desert buckwheat or White Bluffs bladderpod. Such activities could include:

- ORV activities and dispersed recreation;
- New road construction or widening or existing road maintenance;
- New energy transmission lines or expansion of existing energy transmission lines;
- Maintenance of existing energy transmission line corridors;
- Fuels management projects such as prescribed burning; and
- Rehabilitation or restoration activities using plant species that may compete with Umtanum desert buckwheat or White Bluffs bladderpod, or not adequately address habitat requirements for insect pollinators.

These activities could result in the replacement or fragmentation of sagebrush-steppe habitat through the degradation or loss of native shrubs, grasses, and forbs in a manner that promotes increased wildfire frequency and intensity, and an increase in the cover of invasive, nonnative plant species that would compete for soil matrix components and moisture necessary to support the growth and reproduction of either species.

(3) Actions within or near designated critical habitat that would significantly reduce pollination or seed set (reproduction). Such activities could include, but are not limited to:

- Recreational development and associated infrastructure; and
- Use of pesticides, mowing, fuels management projects such as prescribed burning, and post-wildfire rehabilitation activities using plant species that may compete with Umtanum desert buckwheat or White Bluffs bladderpod.

These activities could prevent or reduce successful reproduction by removal or destruction of reproductive plant parts and could impact the habitat needs of generalist insect pollinators through habitat degradation and fragmentation, reducing the availability of insect pollinators for either species.

The occupied areas designated as critical habitat contain the physical and biological features essential to the conservation of Umtanum desert buckwheat and White Bluffs bladderpod, and are within the geographic area occupied by the species at the time of listing under the Act. The unoccupied areas are essential to the conservation of the species because they provide adjacent habitats needed by insect pollinators. Federal agencies

would need to consult with us if a proposed action may affect a listed species and/or designated critical habitat, to ensure that their actions do not jeopardize the continued existence of the species, or destroy or adversely modify designated critical habitat.

#### Exemptions

##### *Application of Section 4(a)(3) of the Act*

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- (1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- (2) A statement of goals and priorities;
- (3) A detailed description of management actions to be implemented to provide for these ecological needs; and
- (4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108–136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense (DOD), or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

There are no DOD lands with a completed INRMP within the proposed critical habitat designation. Therefore, we are not exempting lands from this final designation of critical habitat for Umtanum desert buckwheat or White

Bluffs bladderpod pursuant to section 4(a)(3)(B)(i) of the Act.

#### Exclusions

##### *Application of Section 4(b)(2) of the Act*

Section 4(b)(2) of the Act states that the Secretary must designate and revise critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate will result in the extinction of the species. The statute on its face, as well as the legislative history, is clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor in making that determination.

Under section 4(b)(2) of the Act, the Secretary may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise his discretion to exclude the area only if such exclusion would not result in the extinction of the species.

##### *Exclusions Based on Economic Impacts*

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we prepared a draft economic analysis of the proposed critical habitat designation and related factors (USFWS 2011). The draft analysis was made available for public review from May 15 through July 16, 2012 (77 FR 28704). Following the close of the comment period, a final analysis of the potential economic effects of the designation was developed, taking into consideration the public comments and any new information (USFWS 2012). The final economic analysis is summarized below, and is available at <http://www.regulations.gov>, or upon request from the Manager, Washington Fish and

Wildlife Office (see **FOR FURTHER INFORMATION CONTACT** section).

The intent of the final economic analysis (FEA) is to quantify the economic impacts of all potential conservation efforts for Umtanum desert buckwheat and White Bluffs bladderpod; some of these costs will likely be incurred regardless of whether we designate critical habitat (baseline). The economic impact of the final critical habitat designation is analyzed by comparing scenarios both “with critical habitat” and “without critical habitat.” The “without critical habitat” scenario represents the baseline for the analysis, considering protections already in place for the species (e.g., under the Federal listing and other Federal, State, and local regulations). The baseline, therefore, represents the costs incurred regardless of whether critical habitat is designated. The “with critical habitat” scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts are those not expected to occur absent the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat above and beyond the baseline costs; these are the costs we consider in the final designation of critical habitat. The analysis looks retrospectively at baseline impacts incurred since the species was listed, and forecasts both baseline and incremental impacts likely to occur with the designation of critical habitat.

The FEA also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on government agencies, private businesses, and individuals. Decision-makers can use this information to assess whether the effects of the designation might unduly burden a particular group or economic sector. The FEA quantifies economic impacts of Umtanum desert buckwheat and White Bluffs bladderpod conservation efforts related to section 7 consultation for the following categories of activity: (1) DOE permitting for livestock relocation activities; (2) recreational activities on the Monument; (3) Natural Resources Conservation Service (NRCS) technical and financial assistance programs to landowners to address water management issues; (4) implementation of habitat improvement actions by the Service; and (5) Bureau of Reclamation irrigation water

management programs. A final analysis of the economic impacts of this designation of critical habitat (FEA) (USFWS 2012), is available as supporting information for the critical habitat designation.

The FEA evaluates potential economic impacts of the designation, considering land ownership, reasonably foreseeable land use activities, potential Federal agency actions within the area and section 7 consultation requirements, baseline conservation measures (i.e., measures that would be implemented regardless of the critical habitat designation), and incremental conservation measures (i.e., measures that would be attributed exclusively to the critical habitat designation).

The FEA concludes that incremental economic impacts are unlikely, given the species’ narrow geographic range and the fact that any economic impacts related to conservation efforts to avoid adverse modification or destruction of critical habitat would be, for the most part, indistinguishable from those that would be required because of the listing of the species under the Act. Although unoccupied critical habitat areas are typically where incremental effects would be expected, in this case unoccupied critical habitat areas that support insect pollinators are immediately adjacent to occupied critical habitat. We anticipate that, in most cases, conservation measures or conservation recommendations would be identical, regardless of the critical habitat type. The FEA concludes that any incremental costs would be limited to additional administrative costs that would be borne by Federal agencies associated with section 7 consultations. During the development of the final designation, we will consider economic impacts, public comments, and other new information. Certain areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and or implementing regulations at 50 CFR 424.19.

Our economic analysis did not identify any disproportionate costs that are likely to result from the designation, and we did not receive any comments in response to our assessment of the potential economic impacts of the proposed critical habitat designation. Consequently, the Secretary is not exerting his discretion to exclude any areas from this designation of critical habitat for Umtanum desert buckwheat or White Bluffs bladderpod based on economic impacts.

Exclusions Based on National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense where a national security impact might exist. In preparing this final rule, we have determined that the lands within the designation of critical habitat for Umtanum desert buckwheat and White Bluffs bladderpod are not owned or managed by the Department of Defense and, therefore, we anticipate no impact to national security. Consequently, the Secretary is not exerting his discretion to exclude any areas from the final designation based on impacts on national security.

Exclusions Based on Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors including whether the landowners have developed any Habitat Conservation Plans (HCPs) or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any Tribal issues, and consider the government-to-government relationship of the United States with Tribal entities. We also consider any social impacts that might occur because of the designation.

In preparing this final rule, we have determined that there are currently no HCPs or other management plans that specifically address management needs for Umtanum desert buckwheat or White Bluffs bladderpod, and the final designation does not include any tribal lands or trust resources. We anticipate no impact to tribal lands, partnerships, or HCPs from this critical habitat designation. Accordingly, the Secretary is not exercising his discretion to exclude any areas from the final designation based on other relevant impacts.

#### **Required Determinations**

##### *Regulatory Planning and Review (Executive Orders 12866 and 13563)*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) will review all significant rules. OIRA has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation’s regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative,

and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

*Regulatory Flexibility Act (5 U.S.C. 601 et seq.)*

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996, whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. In this final rule, we are certifying that the critical habitat designation for White Bluffs bladderpod will not have a significant economic impact on a substantial number of small entities (an analysis is not relevant to Umtanum desert buckwheat, since this species occurs exclusively on Federal land). The following discussion explains our rationale.

According to the Small Business Administration (SBA), small entities include small organizations, such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; as well as small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business,

special trade contractors doing less than \$11.5 million in annual business, and agricultural businesses with annual sales less than \$750,000. To determine if potential economic impacts to these small entities are significant, we consider the types of activities that might trigger regulatory impacts under this rule, as well as the types of project modifications that may result. In general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

To determine if the rule could affect a substantial number of small entities, we consider the number of small entities affected within particular types of economic activities most likely to be affected. We apply the "substantial number" test individually to each industry to determine if certification is appropriate. However, the SBREFA does not explicitly define "substantial number" or "significant economic impact." Consequently, to assess whether a "substantial number" of small entities is affected by this designation, this analysis considers the relative number of small entities likely to be impacted in an area. In some circumstances, especially with critical habitat designations of limited extent, we may aggregate across all industries and consider whether the total number of small entities affected is substantial. In estimating the number of small entities potentially affected, we also consider whether their activities have any Federal involvement.

Designation of critical habitat only affects activities authorized, funded, or carried out by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they authorize, fund, or carry out that may affect Umtanum desert buckwheat or White Bluffs bladderpod. Federal agencies also must consult with us if their activities may affect critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinstate consultation for ongoing Federal activities (see *Application of the "Adverse Modification Standard"* section).

In our final economic analysis of the critical habitat designation, we evaluated the potential economic effects on small business entities resulting from conservation actions related to the listing of White Bluffs bladderpod and

the designation of critical habitat. In estimating the numbers of small entities potentially affected, we also considered whether their activities have any Federal involvement. Since the predominant private land use that could be impacted by the critical habitat designation for White Bluffs bladderpod appears to be irrigated agriculture, we focused our RFA and SBREFA analyses to that particular activity. The designation is focused on Federal, State, and private lands that contain occupied habitat and the adjacent areas with native shrub steppe vegetation that provides nearby habitat for insect pollinators. Lands that are under agricultural use are not included in the critical habitat designation.

In 2007, Franklin County, Washington, had 891 farms, which encompassed 246,664 ha (609,046 ac) and had an average farm size of 277 ha (684 ac), ([http://www.co.franklin.wa.us/assessor/demo\\_countywide.html](http://www.co.franklin.wa.us/assessor/demo_countywide.html)). The Franklin County data indicates that 393,025 acres were in irrigated agriculture. The market value of agricultural products sold was \$467 million, and the net cash return from agricultural sales was \$116.8 million. For purposes of this analysis, we assumed the entire critical habitat designation on private lands (170 ha (419 ac)) could be used for irrigated agriculture, to determine the scope of maximum impact for the designation on small entities (i.e., the worst-case scenario). Although the FEA does not differentiate between the acreage most likely suitable for agricultural use and the acreage not suitable for such use, much of the 170 ha (419 ac) is steep, and contains numerous cliffs, high gradient draws, and areas of active and dormant soil fracturing and sloughing. Accordingly, the FEA represents an upper bound, and likely overstates the potential economic impacts to small entities.

Based on Franklin County, Washington, 2007 agricultural data, the designation would overlay approximately 1/10 of 1 percent of the total irrigated acres (159,175 ha (393,025 ac)) in the county. Approximately 65 percent of the total land in farms (609,046 acres) consists of irrigated acreage (393,025 acres). The 2007 irrigated-acres value would proportionally represent approximately \$304 million of the total market value of all agricultural products sold (\$467 million). Each irrigated acre, therefore, proportionally represents approximately \$724 in value/year, based on the 2007 data. Based on this calculation, the maximum economic impact for the entire 419 acres of private land

designated as critical habitat would be \$303,559 if all acreage were conducive to and planned for irrigation agricultural use. However, since much of this acreage is not suitable for agriculture based on topography, the actual economic impact would likely be considerably less. Based on this analysis (see Table 5), the designation of critical habitat within the 419 acres of private property would not have a significant

economic impact on a substantial number of small entities. Since the average size of a farm in Franklin County, Washington, is 277 ha (684 ac), 170 ha (419 ac) represents approximately 61 percent of the size of one average farm; there are 891 farms in the County. Each private property acre within the critical habitat designation potentially represents approximately \$724 in annual value based on 2007

data, although a substantial percentage of this acreage is not conducive to agricultural use because of steep topography and erosion potential. In addition, the designation of critical habitat would not affect private property unless a proposed development activity required Federal authorization or involved Federal funding, which consideration is uncertain.

TABLE 5—POTENTIAL UPPER BOUND ECONOMIC IMPACT TO PRIVATE LAND OF THE CRITICAL HABITAT DESIGNATION FOR WHITE BLUFFS BLADDERPOD \*

Description	Variable	Value
1. Total land in farms (acres) .....	(a) .....	609,046
2. Lands in irrigated farms (acres) .....	(b) .....	393,025
3. Market value agricultural products sold .....	(c) .....	\$467,014,000
4. Net cash return from agricultural sales .....	(d) .....	\$116,803,000
5. Designated critical habitat acres .....	(e) .....	419
6. Percent of (a) represented by (b): [(b) ÷ (a)] .....	(f) .....	65%
7. Proportional (d) represented by (b): [(b) × 0.65] .....	(g) .....	\$303,559,100
8. Percentage of (b) represented by (e): [(e) ÷ (b)] .....	(h) .....	0.001%
9. Proportional value of (g) represented by (e): [(g) × (h)] .....	(i) .....	\$303,559
10. Proportional value (i) per acre (e): [(i) ÷ (e)] .....	(j) .....	\$724

\* Based on 2007 Franklin County tax assessor data.

Other than the above 170 ha (419 ac), the remainder of the areas designated as critical habitat for White Bluffs bladderpod are either on State or Federal lands. Federal and State governments are not considered small entities for purposes of our RFA analysis.

Based on the best available scientific and commercial data, we have not identified a significant number of small entities that may be impacted by the critical habitat designation, based on land ownership information. Small entities are consequently anticipated to bear a relatively low-cost impact as a result of the designation of critical habitat for White Bluffs bladderpod. We did not receive any comments expressing disagreement, interest, or concern regarding our assessment of the potential economic impacts of the critical habitat designation. In summary, we considered whether this designation would result in a significant economic effect on a substantial number of small entities. Based on the above reasoning and currently available information, we concluded that this rule would not result in a significant economic impact on a substantial number of small entities. Therefore, we are certifying that the designation of critical habitat for White Bluffs bladderpod will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

*Energy Supply, Distribution, or Use—Executive Order 13211*

Executive Order 13211 (Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions.

Seventeen high-voltage transmission lines cross the Monument boundaries, 11 of which cross the Hanford Reach. There are also two electric substations and several microwave towers located within the Monument boundaries. Periodic patrols and 24-hour access for emergency replacement of failed equipment are required for these facilities, and lines are patrolled by helicopter usually three times each year to assess potential problem areas. Helicopters may also be used in lieu of ground vehicles for maintenance or repairs (FWS 2008, p. 3–168). Other than an existing Bonneville Power Administration (BPA) overhead transmission line near the Umtanum desert buckwheat population on lands administered by the Department of Energy (DOE), there are no energy facilities within the footprint of the designated critical habitat boundaries. The BPA has existing agreements with the DOE (the agency managing the land where the Umtanum desert buckwheat population occurs) for management of transmission line rights-of-way, access roads, microwave tower lines-of-sight, electric power substations, and other sites. The BPA will likely need to

expand its existing transmission system in the vicinity of the Monument to meet future needs for moving electricity from generation sources in Montana, northern Idaho, and northeastern Washington to load centers in the Pacific Northwest.

Any activities related to transmission system expansion would first require study and analysis under the National Environmental Policy Act and coordination with the DOE and FWS to ensure protection of the Monument’s natural and cultural resources (USFWS 2008, p. 3–169). This analysis would be required regardless of the designation of critical habitat for Umtanum desert buckwheat or White Bluffs bladderpod. However, we have no information indicating that new energy projects are planned for areas within the boundaries of the designated critical habitat units, or that any of the maintenance activities described above would affect either the Umtanum desert buckwheat or White Bluffs bladderpod populations. Accordingly, we do not expect the designation of this critical habitat to significantly affect energy supplies, distribution, or use.

The Office of Management and Budget (OMB) has provided guidance for implementing this Executive Order when undertaking certain actions. OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute “a significant adverse effect” when compared to not taking the regulatory action under consideration,

which include: (1) Reductions in crude oil supply in excess of 10,000 barrels per day; (2) reductions in fuel production in excess of 4,000 barrels per day; (3) reductions in coal production in excess of 5 million tons per year; (4) reductions in natural gas production in excess of 25 million cubic feet per year; (5) reductions in electricity production in excess of 1 billion kilowatts hours per year or in excess of 500 megawatts of installed capacity; (6) increases in energy use required by the regulatory action that exceed thresholds (1) through (6) above; (7) increases in the cost of energy production in excess of one percent; (8) increases in the cost of energy distribution in excess of one percent; and (9) other similarly adverse outcomes. None of these criteria are relevant to this analysis. Thus, based on information in the economic analysis, energy-related impacts associated with Umtanum desert buckwheat and White Bluffs bladderpod conservation activities within critical habitat are not expected. As such, the designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

#### *Unfunded Mandates Reform Act*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or [T]ribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and [T]ribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or Tribal governments “lack authority” to adjust accordingly. At the time of enactment,

these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

We do not believe that this rule will significantly or uniquely affect small governments because it would not produce a Federal mandate of \$100 million or greater in any year; that is, it is not a “significant regulatory action” under the Unfunded Mandates Reform Act. The final economic analysis concludes that, for Federal agencies, section 7 consultation costs under the section 7(a)(2) jeopardy standard for an informal consultation with third party involvement are estimated to be \$7,200. Adding a critical habitat component to the section 7 consultation would increase that cost to \$7,920. The section 7 consultation costs under the section 7(a)2 jeopardy standard for a formal consultation with third party involvement was estimated to be \$15,000, and adding a critical habitat component to the section 7 consultation would increase that cost to \$16,500. The lands within this critical habitat designation are predominantly owned by the Department of Energy and the

Department of the Interior. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. Given the limited incremental costs and the predominant Federal ownership of lands affected by the critical habitat designation, we do not believe that the critical habitat would significantly or uniquely affect small government entities. As such, a Small Government Agency Plan is not required.

#### *Takings—Executive Order 12630*

In accordance with Executive Order 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), this rule is not anticipated to have significant takings implications. As discussed above, the designation of critical habitat affects only Federal actions. Although private parties that receive Federal funding, assistance, or require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Because of the relationship between occupied and unoccupied critical habitat and the status of the species, the draft economic analysis predicted an adverse modification determination would in most cases result in a jeopardy finding for the same action. In addition, we concluded in the final economic analysis that this rule would not result in a significant economic impact on a substantial number of small entities. Therefore, the designation of critical habitat for White Bluffs bladderpod will not have a significant economic impact. No comments were received on the draft economic analysis, and no additional information is available regarding its conclusion regarding incremental effects. We therefore believe the conclusions regarding incremental effects of the designation are valid. Any incremental regulatory burdens attributed to the designation of critical habitat would be expected to be minimal and predominantly associated with additional administrative costs related to section 7 consultations. The takings implications assessment concludes that the designation of critical habitat for Umtanum desert buckwheat and White Bluffs bladderpod does not pose a significant takings implication for lands within or affected by the designation.

*Federalism—Executive Order 13132*

In accordance with Executive Order 13132 (Federalism), this rule does not have significant Federalism effects. A federalism impact summary statement is not required. In keeping with Department of the Interior policy, we requested information from, and coordinated development of, this critical habitat designation with the appropriate State resource agencies in Washington. We did not receive comments from any State of Washington government agencies. The designation of critical habitat in areas currently occupied by Umtanum desert buckwheat and White Bluffs bladderpod may impose no additional regulatory restrictions to those currently in place and, therefore, has little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments because the areas that contain the physical or biological features essential to the conservation of the species are more clearly defined, and the elements of the features of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

*Civil Justice Reform—Executive Order 12988*

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Executive Order. We are designating critical habitat in accordance with the provisions of the Act. This final rule identifies the elements of physical and biological features essential to the conservation of Umtanum desert buckwheat and White

Bluffs bladderpod within the designated areas to assist the public in understanding the habitat needs of the species.

*Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)*

This rule does not contain any new collections of information that require approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

*National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.)*

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses as defined by NEPA (42 U.S.C. 4321 et seq.) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

*Government-to-Government Relationship With Tribes*

In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments (59 FR 22951), Executive Order 13175, and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997, "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act", we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Native American Indian culture, and to make information available to Tribes. We determined that there are no tribal lands that are either occupied by Umtanum desert buckwheat or White Bluffs bladderpod

at the time of listing that contain the features essential for conservation of the species, or unoccupied by these species and essential to their conservation. Therefore, we are not designating any Tribal lands as critical habitat for either Umtanum desert buckwheat or White Bluffs bladderpod. The Confederated Tribes and Bands of the Yakima Nation indicated they have interest in protecting and managing resources occurring in the Ceded Territories designated under the Treaty of 1855. The Tribe submitted a letter stating they are supportive of the "Federal special status listing" of Umtanum desert buckwheat and White Bluffs bladderpod.

**References Cited**

A complete list of all references cited in this final rule is available on the Internet at <http://www.regulations.gov>, or upon request from the Manager, Washington Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT** section).

**Author(s)**

The primary authors of this final rule are the staff members of the Central Washington Field Office.

**List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

**Regulation Promulgation**

Accordingly, we hereby amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

**PART 17—[AMENDED]**

■ 1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361–1407; 1531–1544; 4201–4245, unless otherwise noted.

■ 2. In § 17.96, amend paragraph (a) by adding an entry for "*Physaria douglasii* subsp. *tuplashensis* (White Bluffs bladderpod)" in alphabetical order under Family Brassicaceae and an entry for "*Eriogonum codium* (Umtanum desert buckwheat)" in alphabetical order under Family Polygonaceae to read as follows:

**§ 17.96 Critical habitat—plants.**

(a) *Flowering plants.*

\* \* \* \* \*

Family Brassicaceae: *Physaria douglasii* subsp. *tuplashensis* (White Bluffs bladderpod)

(1) The critical habitat unit is depicted for Franklin County, Washington, on the map at paragraph (5) of this entry.

(2) The primary constituent elements of the physical and biological features essential to the conservation of critical habitat for *Physaria douglasii* subsp. *tuplashensis* are the following:

(i) Weathered alkaline paleosols and mixed soils overlying the Ringold Formation. These soils occur within and around the exposed caliche-like cap deposits associated with the White Bluffs of the Ringold Formation, which contain a high percentage of calcium carbonate. These features occur between 210–275 m (700–900 ft) in elevation.

(ii) Sparsely vegetated habitat (less than 10–15 percent total cover),

containing low amounts of nonnative or invasive plant species (less than 1 percent cover).

(iii) The presence of insect pollinator species.

(iv) The presence of native shrub steppe habitat within the effective pollinator distance (300 m (approximately 980 ft)).

(v) The presence of stable bluff formations with minimal landslide occurrence.

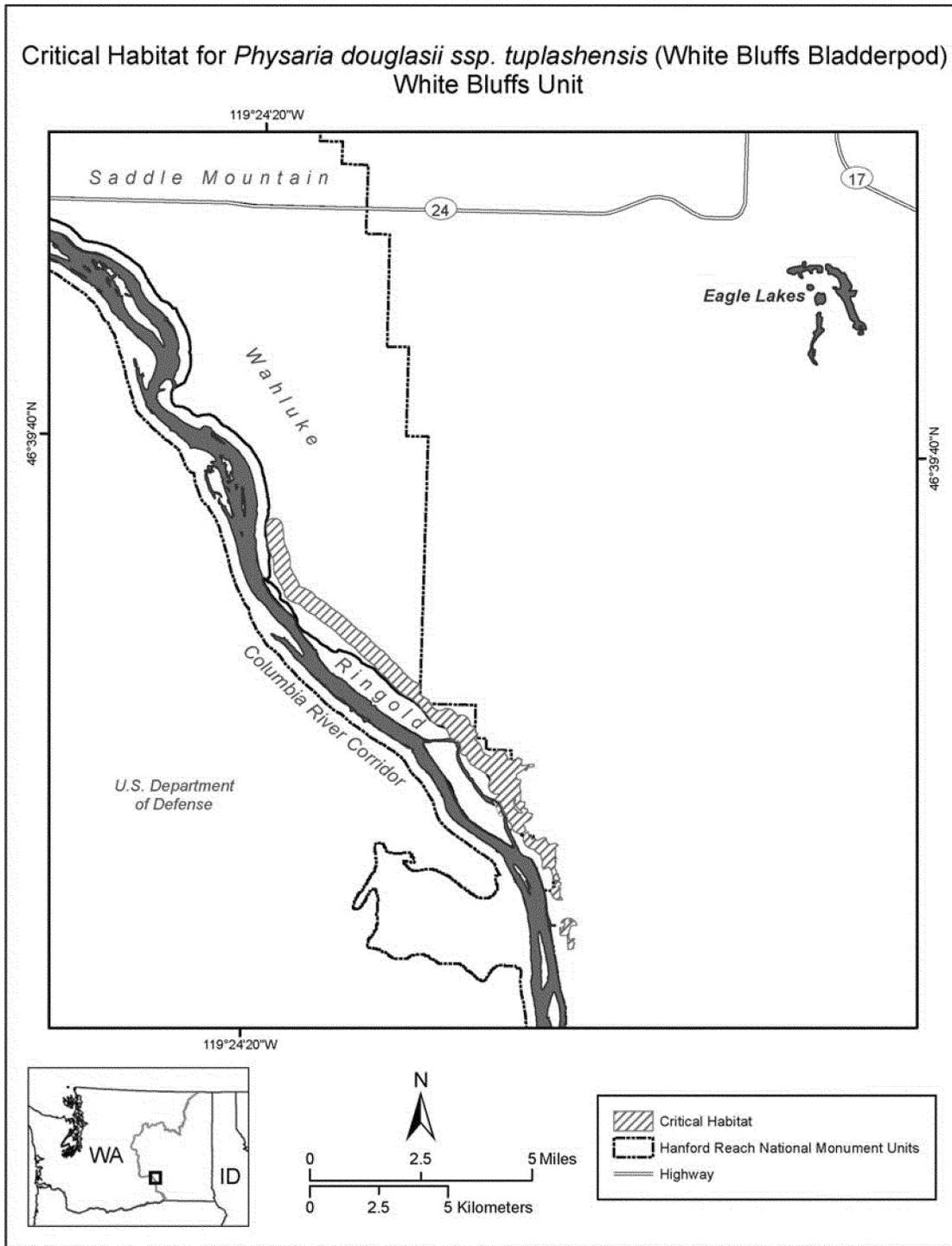
(3) Critical habitat does not include irrigated private lands or manmade structures (such as buildings, pavement, or other structures) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

(4) This critical habitat unit was mapped using Universal Transverse Mercator, Zone 11, North American Datum 1983 (UTM NAD 83)

coordinates. These coordinates establish the vertices of the unit boundaries. The map in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which the map is based are available to the public at the field office internet site (<http://www.fws.gov/wafwo/HanfordPlants/FLFCH.html>), <http://www.regulations.gov> at Docket No. FWS-R1-ES-2013-0012, and at the Service's Washington Fish and Wildlife Office. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) *Note:* Map of critical habitat for *Physaria douglasii* subsp. *tuplashensis* (White Bluffs bladderpod) follows:

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\* \* \* \* \*

Family Polygonaceae: *Eriogonum codium* (Umtanum desert buckwheat)

(1) The critical habitat unit is depicted for Benton County, Washington, on the map at paragraph (5) of this entry.

(2) The primary constituent elements of the physical and biological features essential to the conservation of *Eriogonum codium* are the following:

(i) North- to northeast-facing, weathered basalt cliffs of the Wanapum Formation at the eastern end of Umtanum Ridge in Benton County that contain outcrops, cliff breaks, slopes, and flat or gently sloping cliff tops with exposed pebble and gravel soils.

(ii) Pebbly lithosol talus soils derived from surface weathering of the top of the Lolo Flow of the Priest Rapids Member of the Wanapum Formation.

(iii) Sparsely vegetated habitat (less than 10 percent total cover), containing low amounts of nonnative or invasive plant species (less than 1 percent cover).

(iv) The presence of insect pollinator species.

(v) The presence of native shrub steppe habitat within the effective pollinator distance (300 m (approximately 980 ft)) around the population.

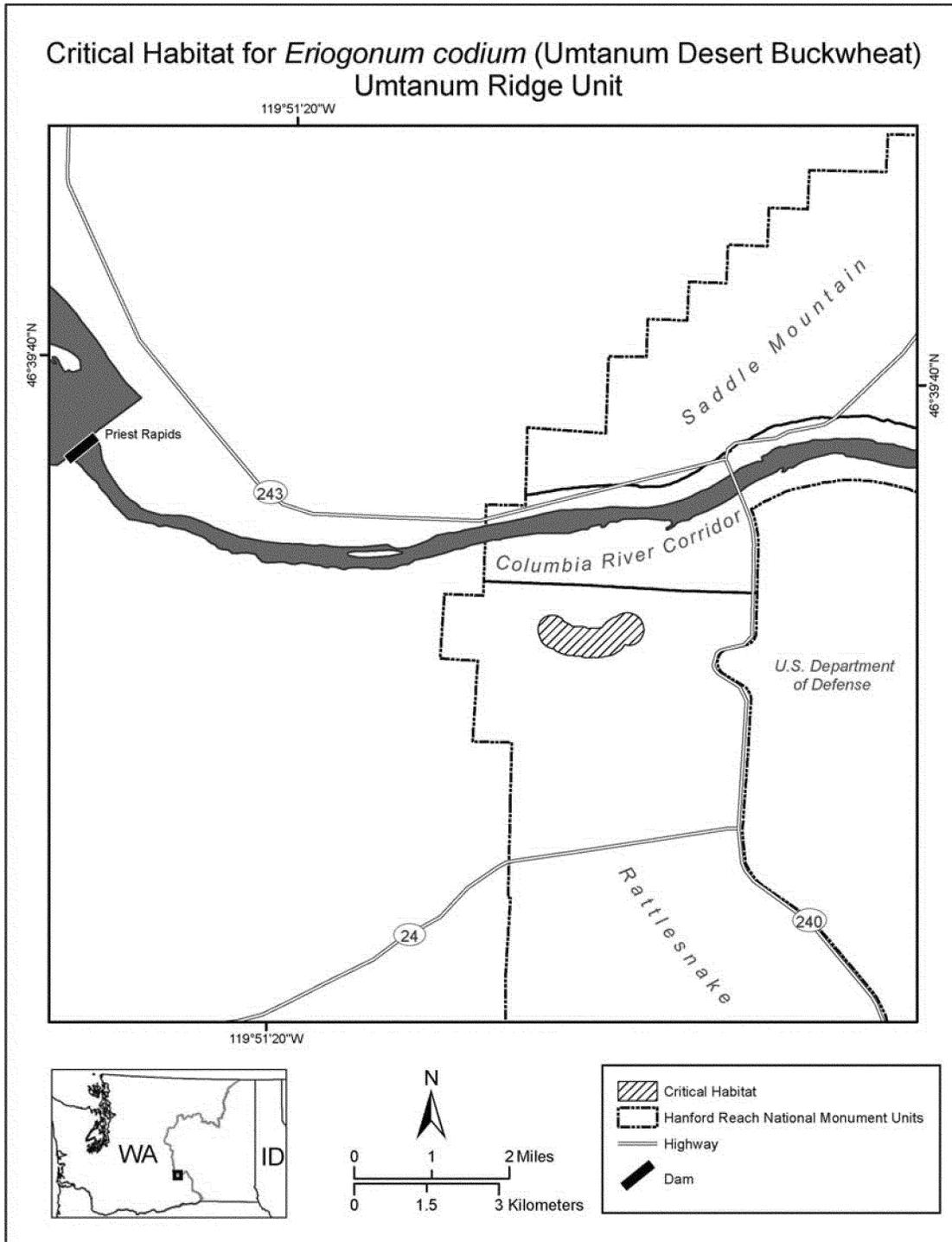
(3) Critical habitat does not include manmade structures (such as buildings, pavement, or other structures) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

(4) This critical habitat unit was mapped using Universal Transverse Mercator, Zone 11, North American Datum 1983 (UTM NAD 83) coordinates. These coordinates establish

the vertices of the unit boundaries. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which the map is based are available to the public at the field office Internet site (<http://www.fws.gov/wafwo/HanfordPlants/FLFCH.html>), <http://www.regulations.gov> at Docket No.

FWS-R1-ES-2013-0012, and at the Service's Washington Fish and Wildlife Office. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Note: Map of critical habitat for *Eriogonum codium* (Umtanum desert buckwheat) follows:



\* \* \* \* \*

Dated: April 12, 2013.

**Rachel Jacobson,**

*Principal Deputy Assistant Secretary for Fish  
and Wildlife and Parks.*

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**BILLING CODE 4310-55-C**